SENTECH

Sensor Technologies America, Inc.

INDUSTRIAL & MEDICAL CAMERA CATALOG

2010-2011 INDUSTRIAL CAMERAS

- GigE Vision®
- USB 2.0
- Auto Focus
- CameraLink®
- OEM
- Analog

www.SentechAmerica.com

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Featured Products

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STC-AF133A
HD Auto Focus Block

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STC-GEC500A
5MP GigE Camera

STC-TC202USB-ASH
USB MV Hard Trigger

pp. **20**

All specifications, descriptions, information, etc., are subject to change without prior notice.

Company Introduction

Who is Sentech?

Sentech is a Japanese industrial camera manufacture with more than twenty years of experience. Our team consists of over 60 dedicated individuals represented in four counties.

We combine state-of-the-art technology with aggressive pricing and unequaled customer support.

What are our capabilities?

With over half of our team being design engineers, we have the infrastructure and technical ability to build industrial grade cameras for any level of system integration.

This includes:

- Standardized industrial / medical cameras
- Innovative advancement of market technologies
- OEM products built to customer specification

Sentech is unique in its degree of support. Case and point, if a customer lacks technical expertise, we provide on-site engineering assistance. We also provide bidirectional support with our developing engineers in the US and Japan.

Where are we going?

We are very excited about this years new product introductions. This year Sentech is introducing the most advanced lineup of GigE cameras available on the market. We are also launching a new HD auto focus camera which is CCD based with a 16x9 aspect ratio and HDMI digital output. We have just introduced a new set of advanced software drivers for our existing USB camera family, as well as a new series of USB cameras capable of full machine vision functionality including high-speed triggering with image delivery confirmation.

The Sentech Team

our | Corporate Management

M. Kawakami
President

Tom Campbell
VP of Sales & Marketing

Kim Mizuno
VP of Operations & Engineering

our | Engineers

Mick Akiyama
Engineer

Kevin Watanabe
Engineer

our | Support

Miyuki Campbell
Accounting

Satoko Silva
Order Processor

Cyndi Logan
Account Receivable

Michelle Campbell
Documentation

Ric Delucio
Logistics

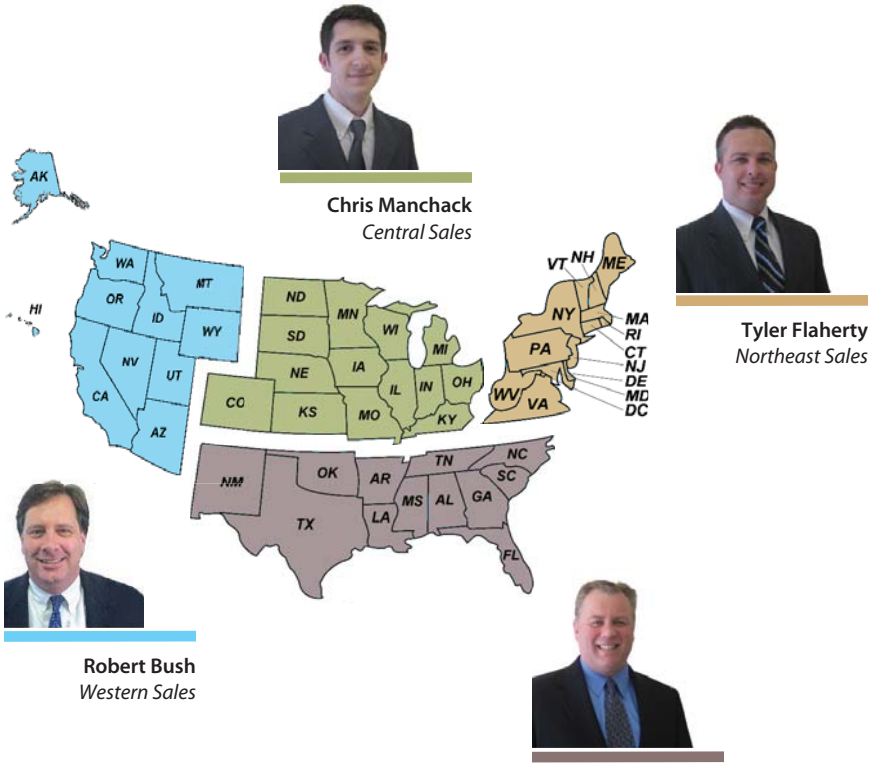
Zachary Crossland
Information Technology (Contracted)

our | Sales Management

Chance Holder
National Sales Manager
(Mexico, South America)

Adam Westcott
International Sales Manager
(Canada, Europe, SE Asia, etc.)

our | Sales



Chris Manchack
Central Sales

Tyler Flaherty
Northeast Sales

Robert Bush
Western Sales

Chris Vincenzo
Southern Sales

SENTECH

1345 Valwood Parkway, Suite 320
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(972) 481-9209 - Fax

Sentech 2010 Facts

- Our customers always come first. Everything we do is centered on the concept of how to best support our customers.
- Sensor Technologies America, Inc. (Sentech America) was established in 1999, in Dallas Texas. Due to the economic impact on capital markets, 2009 was the first year in Sentech America's eleven year history, that we did not experience significant growth. However, despite this fact, we enjoyed the addition of 153 new companies to our family of Sentech customers. We believe this reflects customer satisfaction with our products, quality, pricing and support.
- Sensor Technology Co., Ltd., our parent company in Japan, was established in 1987.
- Sentech designed, manufactured and sold over 105,000 cameras in 2009.
- In 2009, we sold cameras in 41 countries around the world.
- We have offices in the United States, Japan and Taiwan, China and distributors in the USA, Germany, England, Israel, Italy, Singapore, Hong Kong and Australia.

sentech | Offices

Sensor Technologies America, Inc.

Sentech's world marketing and sales headquarters

Sales Territory: USA, Canada, Europe, Africa, Australia, South America, SE Asia, India, Middle East

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Website: www.SentechAmerica.com

Sensor Technology Co., Ltd.

Sentech's world design and anufacturing headquarters

Sales Territory: Japan, Korea

7F, Harada Center Building
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Atsugi-City, Kanagawa
243-0018 Japan

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Website: www.sentech.co.jp

Taiwan Sensor Technology, Inc.

Sales Territory: Taiwan and China

3F-6, No. 9, Aiguo W. Rd.,
Jhong Jheng District,
Taipei City 100, Taiwan, R.O.C.

+886-2-2383-2331 - Telephone
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Email: sentech0501@yahoo.com.tw

usa | Distributors

Aegis

Aegis is located in Arizona, with sales offices in Carlsbad, California and Chicago, Illinois. Aegis carries a comprehensive line of Sentech cameras for industrial imaging and machine vision applications.

Aegis offers excellent customer service and technical support.

Contact: Carolynn Larson Garcia
1465 N. Fiesta Blvd., Suite 101
Gilbert, AZ 85233
480-635-8400 - Telephone
480-635-9272 - Fax

Email: carolynn@aegiselect.com
Website: www.aegiselect.com

AVS

Located in San Diego, California, AVS is a major distributor of industrial, security, and broadcast video products.

Contact: Cliff Moore
4575 Ruffner St.
San Diego, CA 92111
800-284-2288 - Telephone
858-565-7845 - Fax

Email: sales@avsupply.com
Website: www.avsupply.com

Industrial Vision Source

Industrial Vision Source is a technical sales company. IVS can assist during the design phase for industrial imaging systems including CCD, CMOS, USB, CameraLink®, Firewire and GigE video cameras. IVS also stocks frame grabbers, lenses, cables and monitors.

Contact: Allan McDonald
13710 Hutton Dr.
Farmers Branch, TX 75234
800-627-6734 x7022 - Toll Free US
972-406-7022 - Telephone
972-406-7066 - Fax

Email: allan.mcdonald@i-v-s.com
Website: www.i-v-s.com

International Distributors

Many of Sentech's customers are multi-nationally based. In our efforts to further support our customers, Sentech has expanded its sales and support bases internationally as well. Our international distributors have been selected based on a process which carefully evaluated both their customer support and technical support abilities.

americas | Canada

Bock Optronics Inc.

Bock Optronics is located in Toronto, Canada. Since 1987, Bock Optronics has served the market as a comprehensive distributor for innovative and progressive manufacturers of electronic imaging hardware.

Contact:

Hans Bock

14 Steinway Blvd., Unit 7
Toronto, Ontario
M9W 6M6 Canada
(416) 674-2804 - Telephone
(416) 674-1827 - Fax
Email: hansbock@bockoptronics.ca,
Website: www.bockoptronics.ca

asia | Hong Kong

Compuvision

Located in Hong Kong, Compuvision specializes in machine vision components and systems for the manufacturing industry. With over 15 years experience in optics, lighting, frame grabbers, and imaging, Compuvision provides strong customer solutions and support.

Contact:

K.Y. Law, Ph.D.

Unit 1025, Nan Fung Center
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Email: compuvsn@hkstar.com,
Website: www.compuvision.com.hk

europe | Germany

Videor

Videor is located in Roedermark, Germany with sales offices located in several European countries. Videor is a leading distributor of industrial, security and broadcast video equipment and lenses.

Contact:

Florian Nadolny

Carl-Zeiss Strasse 37
D-63322 Roedermark, Germany
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Email: f.nadolny@videor.com
Website: www.videor.com

middle east | Israel

L-Tech Ltd.
(Lewenstein Technologies Ltd.)

L-Tech is a professional engineering and technical solutions provider for video imaging, propulsion control, positioning, medical imaging and optics.

Contact:

Itzik Mashiach

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+972-3-9780829 - Fax
Email: info@l-tech.co.il
Website: www.l-tech.co.il

asia | Singapore

Hi-Tech Electronics Pte. Ltd.

Hi-Tech is headquartered in Singapore, with offices in Malaysia, Indonesia and Thailand. Hi-Tech provides a wide range of products for vision applications, including Sentech cameras and vision software.

Contact:

Eric Yeo

60 Kaki Bukit Place
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Singapore 415979
+65 6747 2555 - Telephone
+65 6747 2511 - Fax
Email: sls@hitech.com.sg
Website: www.hitech.com.sg

europe | Italy

Rapitron s.r.l.

Located in Milano, Italy, Rapitron has over 25 years experience in the professional and industrial video markets. Rapitron offers a wide range of products including Sentech cameras targeted for security, industrial, electro-medical and scientific applications.

Contact:

Raffaele Picciotto

Via Washington 59
20146 Milano, Italy
+39 02 659 8282 - Telephone
+39 02 654 525 - Fax
Email: rafpi@rapitron.it
Website: www.rapitron.it

europe | United Kingdom

Alrad Instruments Ltd.

Alrad Instruments is located in Newbury Berkshire, England. Alrad is an established family business which has specialized in the distribution of video equipment for scientific and industrial applications.

Contact:

Raf Slotwinski

Alder House, Turnpike Road Industrial Estate
Newbury, Berkshire RG14 2NS, U.K.
+44 (0) 1635 30345 - Telephone
+44 (0) 1635 32630 - Fax
Email: sales@alrad.co.uk
Website: www.alrad.co.uk

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(972) 481-9209 - Fax

Does your application require a custom designed camera?

If so, please give Sentech a call and we will see if we can help. In 1987 Sentech started by developing custom cameras in Japan for some of the giant Japanese electronics manufacturers. A few examples of custom cameras we have built are:

- High Speed Line Scan
- High Speed Remote Head Progressive Scan
- 2D Matrix Readers
- Smart Cameras
- Low Wattage C-Mos Camera for ATMs

camera | Markets

Automotive
- Night Vision
- Public Transportation Vehicles

Machine Vision
- Traditional automated QC applications
- Both stationary and high speed
- Video based guidance systems
- Robotics
- Automated Production Systems
- Traffic Control

Dental
- Oral Cameras
- Microscopes

High End Security Systems
- Biometrics
- Destructive Environment Monitoring
- Aid Devices
- Advanced Weaponry

Industrial
- Metrology - automated measuring systems
- PCB Inspection
- Industrial Microscopes
- High Speed Printing Process Controls
- Pipe Inspection
- Borescope

Medical
- Endoscopes (Arthroscopes, Otoscopes, Laryngoscopes, Colposcopes)
- Medical Microscopes
- Low Vision Systems

Microscopy
- Desktop Microscopes
- Laboratory Microscopes

2010 | New Products

HD Auto Focus Block *(STC-AF133)*
Sentech's CCD based high-definition auto focus block camera is ideal for low vision systems, industrial and medical applications. This camera outputs a 720p, 16 x 9 image and has complete "on-camera" low vision processing. pp. 50-53, 56

GigE "Power Plus" *(STC-GE500OX/OA)*
This camera features a user programmable FPGA and DDR2 memory. This allows the user to program their own proprietary code and have complete control over the DDR2 memory allowing faster downstream system processing. pp. 26-27, 32-33, 35

Raw Digital Video Output *(STC-B202A)*
This versatile OEM solution outputs video in a parallel digital format. As a result, the user will shorten system design time, sustain reliable data transmission and achieve an overall system cost reduction. pp. 44-47, 49

USB 2.0 Camera *(STC-TC202USB-ASH)*
Sentech's 'ASH' series is a USB camera designed for Machine Vision and extremely low light applications. It features soft and hard triggering, extended integration *(up to five minutes)* and is available in VGA, XGA, SXGA, and UXGA models. pp. 12-13, 20-21, 23

Night Probe Camera *(STC-HUE64)*
Designed specifically for police and military use, this ultra-compact series has the ability to "see" in completely dark environments without IR or visible spectrum lighting. It has internal/external sync, RS232C communication, both composite and Y/C video outputs. pp. 58-61

Public Transportation:
Designed for heavy vibration and impact environments. Designed for easy installation and maintenance. Works in a wide variety of lighting conditions. pp. 58-59, 62-63

Day / Night IR Cameras:
Sentech's IR transit camera was designed specifically for the public transportation industry. It uses special IR illumination that resolve two big problems on trains or buses, "hot spots" on close-up targets and one unit can evenly illuminate the entire interior of a bus. pp. 58-59, 62-63

High Performance and Versatile

SENTECH

USB 2.0
Camera Series

Cost-Cutting Technology

The USB 2.0 Camera series is the most popular line of cameras offered by Sentech. The "Standard" family of USB cameras are designed for standard industrial USB applications and extended low light applications. The "ASH" family of USB cameras are designed for machine vision and/or extended integration. Both the "Standard" and "ASH" cameras are available in B/W or color and offer VGA (0.3MP) to UXGA (2MP) resolution. Both are supported by all standard industry drivers and Sentech's viewing software and SDK.

Key Features

- Color or B/W from VGA to UXGA Resolution
- Low Light Extended Integration *(w/ Complex Noise Reduction)*
- Variable Partial Scan and Clock Speed Control
- Drawing / Annotation & Horizontal and Vertical Flip
- Standard USB or Lock Type Connectors
- DirectX, Twain, Linux, Halcon, and NI LabVIEW™ Drivers
- Sentech Viewing Software and SDKs

ASH Type

- Precision Case w/ Heat Sync Design and LED Indicator
- Machine Vision Features
  - Triggering (Hardware or Software based)
  - Integrated End Signal, Readout Signal Control
  - 4 Configurable I/Os

USB 2.0 Overview

Models	Sensor			Resolution				Frame Rate				
	1/3"	1/2"	1/1.8"	VGA	XGA	SXGA	UXGA	15 fps	19 fps	22 fps	30 fps	60 fps
Monochrome USB 2.0 Cameras												
STC-TB33USB	●			●								●
STC-TB83USB	●				●						●	
STC-TB133USB	●					●				●		
STC-TB152USB		●				●			●			
STC-TB202USB			●				●	●				
Color USB 2.0 Cameras												
STC-TC33USB	●			●								●
STC-TC83USB	●				●						●	
STC-TC133USB	●					●				●		
STC-TC152USB		●				●			●			
STC-TC202USB			●				●	●				

USB 2.0 Standard
Cased Models

This is a compact, progressive scan, USB cased camera series with a color or monochrome CCD, featuring image capture, digital zoom, a feature-rich user based menu setup and control and software triggering. This series is available with a top or rear USB connector. Software includes DirectX (WMD Stream), Twain, Linux, Halcon and NI LabVIEW drivers, SDK's, as well as the Sentech Viewing Software.

UXGA, *2 Megapixel*

STC-TB202USB-A *(Monochrome)*
STC-TC202USB-A *(Color)*

- 1/1.8" Image Sensor
- 1600 (H) x 1200 (V)
- 15fps

SXGA, *1.3 Megapixel*

STC-TB152USB-A *(Monochrome)*
STC-TC152USB-A *(Color)*

- 1/2" Image Sensor
- 1280 (H) x 1024 (V)
- 19fps

usb 2.0 | Accessories

Cables

CAB-6USB A-B
CAB-6USB A-B Lock

Lenses

Various C-Mount Lenses
Various CS-Mount Lenses
Various Telecentric Lenses

Lens Mount

C-Adapter

SXGA, *1.25 Megapixel*

STC-TB133USB-A *(Monochrome)*
STC-TC133USB-A *(Color)*

- 1/3" Image Sensor
- 1280 (H) x 960 (V)
- 22fps

XGA, *0.8 Megapixel*

STC-TB83USB-A *(Monochrome)*
STC-TC83USB-A *(Color)*

- 1/3" Image Sensor
- 1024 (H) x 768 (V)
- 30fps

VGA, *0.3 Megapixel*

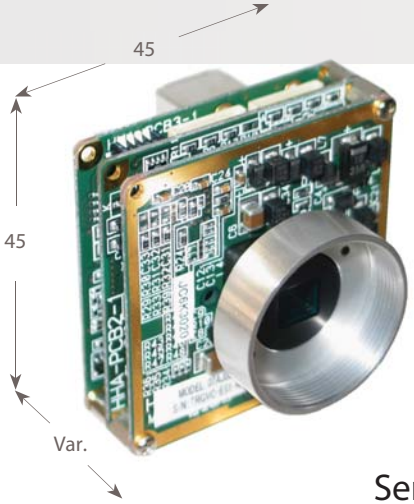
STC-TB33USB-A *(Monochrome)*
STC-TC33USB-A *(Color)*

- 1/3" Image Sensor
- 640 (H) x 480 (V)
- 60fps

USB 2.0 Standard *Board* Models

Standard "BT" Models

Standard "BS" Models



This is a board-level USB camera available with a color or monochrome progressive scan CCD. The camera features image capture, digital zoom, a feature-rich user based menu setup and control and software trigger. Sentech USB board cameras include DirectX (WMD Stream), Twain, Linux, Halcon, and NI LabVIEW drivers, a user SDK, as well as the Sentech Viewing Software.

Lens Mount Options

Standard "BT" Type

Standard "BTL" Type

Standard "BSCS" Type

UXGA, *2 Megapixel*

STC-TB202USB-B *(Monochrome)*
STC-TC202USB-B *(Color)*

- 1/1.8" Image Sensor
- 1600 (H) x 1200 (V)
- 15fps

SXGA, *1.3 Megapixel*

STC-TB152USB-B *(Monochrome)*
STC-TC152USB-B *(Color)*

- 1/2" Image Sensor
- 1280 (H) x 1024 (V)
- 19fps

SXGA, *1.25 Megapixel*

STC-TB133USB-B *(Monochrome)*
STC-TC133USB-B *(Color)*

- 1/3" Image Sensor
- 1280 (H) x 960 (V)
- 22fps

XGA, *0.8 Megapixel*

STC-TB83USB-B *(Monochrome)*
STC-TC83USB-B *(Color)*

- 1/3" Image Sensor
- 1024 (H) x 768 (V)
- 30fps

VGA, *0.3 Megapixel*

STC-TB33USB-B *(Monochrome)*
STC-TC33USB-B *(Color)*

- 1/3" Image Sensor
- 640 (H) x 480 (V)
- 60fps

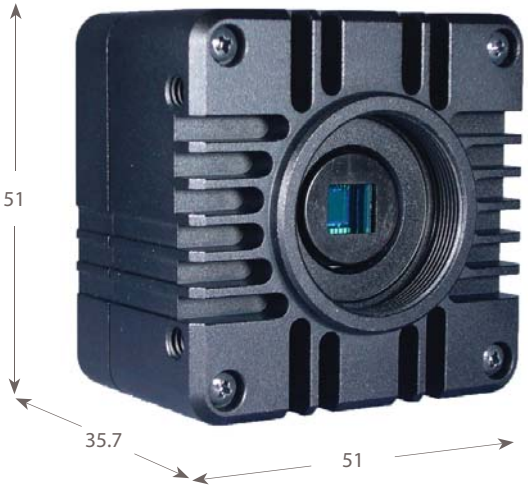
USB 2.0 Standard Camera Comparison Chart

Standard Models *(Includes Software Trigger)*

Monochrome / Color	STC-TB33USB-A or B *STC-TC33USB-A or B*	*STC-TB83USB-A or B* *STC-TC83USB-A or B*	STC-TB133USB-A or B *STC-TC133USB-A* or B	STC-TB152USB-A or B *STC-TC152USB-A or B*	STC-TB202USB-A or B *STC-TC202USB-A or B*
Resolution: *Full* *1/2 Partial* *1/4 Partial*	VGA (0.3 Megapixel) 640 (H) x 480 (V) 640 (H) x 224 (V) 640 (H) x 80 (V)	XGA (0.8 Megapixel) 1024 (H) x 768 (V) 1024 (H) x 344 (V) 1024 (H) x 136 (V)	SXGA (1.25 Megapixel) 1280 (H) x 960 (V) 1280 (H) x 440 (V) 1280 (H) x 168 (V)	SXGA (1.3 Megapixel) 1280 (H) x 1024 (V) 1280 (H) x 476 (V) 1280 (H) x 184 (V)	UXGA (2 Megapixel) 1600 (H) x 1200 (V) 1600 (H) x 544 (V) 1600 (H) x 208 (V)
Imager Sensor:	1/3" CCD (ICX424AL) 1/3" CCD *(ICX424AQ)*	1/3" CCD (ICX204AL) 1/3" CCD *(ICX204AK)*	1/3" CCD (ICX445AL) 1/3" CCD *(ICX445AQ)*	1/2" CCD (ICX205AL) 1/2" CCD *(ICX205AK)*	1/1.8" CCD (ICX274AL) 1/1.8" CCD *(ICX274AQ)*
Signal Format:	Progressive: Monochrome or Color			Progressive: Monochrome or Color	
Maximum Frame Rates: *Full Scan* *1/2 Partial* *1/4 Partial*	60 fps 120 fps 240 fps	30 fps 60 fps 120 fps	22 fps 44 fps 89 fps	19 fps 38 fps 77 fps	15 fps 30 fps 60 fps
Pixel Clock Frequencies:	24.5454 MHz	29.5 MHz	36.818 MHz		
Trigger Mode:	Software Trigger (Free-run / Edge preset / Pulse Width / Start & Stop)		Software Trigger (Free-run / Edge preset / Pulse Width / Start & Stop)		
Trigger Controls:	Integration End Signal, Readout Signal Control, HD Trigger Timing Control		Integration End Signal, Readout Signal Control, HD Trigger Timing Control		
Scanning Methods:	Full Progressive, Partial (1/1, 1/2, 1/4), Variable, Binning (B/W models)		Full Progressive, Partial (1/1, 1/2, 1/4), Variable, Binning (B/W models)		
Sync System:	Internal Sync		Internal Sync		
Shutter Speed:	Auto / Manual (Set via Software)		Auto / Manual (Set via Software)		
Minimum Illumination:	0.08 Lux @ F1.2, 50 IRE *2.24 Lux @ F1.2, 50 IRE*	0.11 Lux @ F1.2, 50 IRE *5.28 Lux @ F1.2, 50 IRE*	0.18 Lux @ F1.2, 50 IRE *3.23 Lux @ F1.2, 50 IRE*	0.12 Lux @ F1.2, 50 IRE *2.7 Lux @ F1.2, 50 IRE*	0.11 Lux @ F1.2, 50 IRE *1.39 Lux @ F1.2, 50 IRE*
Extended Low Light:	Extended Low Light Capability via Software Trigger		Extended Low Light Capability via Software Trigger		
Gain:	Auto / Manual (Analog and Digital Gains set independently via Software)		Auto / Manual (Analog and Digital Gains set independently via Software)		
Gamma:	Manual (Set via Software)		Manual (Set via Software)		
Lens Mount:	CS Mount / Micro Lens Mount		CS Mount / Micro Lens Mount	C-Mount	
White Balance:	*Auto / Manual / One-Shot (Set via Software)*		*Auto / Manual / One-Shot (Set via Software)*		
Video Output:	USB 2.0 High Speed		USB 2.0 High Speed		
Connectors:	Standard USB (Lock Down Type Available)		Standard USB (Lock Down Type Available)		
Shock and Vibration:	Vibration: 10G (20 to 200Hz), Shock: 70G (3 directions, 3 times each)		Vibration: 10G (20 to 200Hz), Shock: 70G (3 directions, 3 times each)		
Input Voltage:	+5Vdc via USB Connector		+5Vdc via USB Connector		
Power Consumption:	1.75W, < 350mA	1.60W, < 320mA	2.15W, < 430mA	2.25W, < 450mA	2.80W, < 560mA
Operating Temperature:	0° ~ 40°C (32° ~ 104°F)		0° ~ 40°C (32° ~ 104°F)		
Storage Temperature:	-30° ~ 65°C (-22° ~ 149°F)		-30° ~ 65°C (-22° ~ 149°F)		
Dimensions:	Cased: 51 (W) x 51 (H) x 44.3 (D) mm (2" x 2" x 1.74") Board: 45 (W) x 45 (W) x Var. (1.77" x 1.77" x Var.)		Cased: 51 (W) x 51 (H) x 44.3 (D) mm (2" x 2" x 1.74") Board: 45 (W) x 45 (W) x Var. (1.77" x 1.77" x Var.)		
Weight:	Cased: Approximately 145g (5.11oz), Board Approximately: 45g (1.58oz)		Cased: Approximately 145g (5.11oz), Board Approximately: 45g (1.58oz)		

USB 2.0 "ASH"
Hardware Trigger Models

(Also Includes Software Triggers)



Sentech's "ASH" series is a USB camera designed for *Machine Vision* and extremely low light applications. The "ASH" camera features machine vision triggering and complete control of the triggering process. This camera has both pulse width and edge preset triggers that can be supplied to the camera via external hardware or a computer. The extended integration feature of the camera makes it ideal for low light applications.

UXGA, *2 Megapixel*

STC-TB202USB-ASH *(Monochrome)*
STC-TC202USB-ASH *(Color)*

- 1/1.8" Image Sensor
- 1600 (H) x 1200 (V)
- 15fps

SXGA, *1.3 Megapixel*

STC-TB152USB-ASH *(Monochrome)*
STC-TC152USB-ASH *(Color)*

- 1/2" Image Sensor
- 1280 (H) x 1024 (V)
- 19fps

usb 2.0 | Accessories

Cables

CAB-6USB A-M
CAB-6USB A-M Lock

Lenses

Various C-Mount Lenses
Various CS-Mount Lenses
Various Telecentric Lenses

Lens Mount

C-Adapter

SXGA, *1.25 Megapixel*

STC-TB133USB-ASH *(Monochrome)*
STC-TC133USB-ASH *(Color)*

- 1/3" Image Sensor
- 1280 (H) x 960 (V)
- 22fps

XGA, *0.8 Megapixel*

STC-TB83USB-ASH *(Monochrome)*
STC-TC83USB-ASH *(Color)*

- 1/3" Image Sensor
- 1024 (H) x 768 (V)
- 30fps

VGA, *0.3 Megapixel*

STC-TB33USB-ASH *(Monochrome)*
STC-TC33USB-ASH *(Color)*

- 1/3" Image Sensor
- 640 (H) x 480 (V)
- 60fps

usb 2.0 | Specifications

"ASH" Models *(Includes Hardware and Software Triggers)*

Monochrome / Color	STC-TB33USB-ASH / STC-TC33USB-ASH	STC-TB83USB-ASH / STC-TC83USB-ASH	STC-TB133USB-ASH / STC-TC133USB-ASH	STC-TB152USB-ASH / STC-TC152USB-ASH	STC-TB202USB-ASH / STC-TC202USB-ASH
Resolution: *Full* *1/2 Partial* *1/4 Partial*	VGA (0.3 Megapixel) 640 (H) x 480 (V) 640 (H) x 224 (V) 640 (H) x 80 (V)	XGA (0.8 Megapixel) 1024 (H) x 768 (V) 1024 (H) x 344 (V) 1024 (H) x 136 (V)	SXGA (1.25 Megapixel) 1280 (H) x 960 (V) 1280 (H) x 440 (V) 1280 (H) x 168 (V)	SXGA (1.3 Megapixel) 1280 (H) x 1024 (V) 1280 (H) x 476 (V) 1280 (H) x 184 (V)	UXGA (2 Megapixel) 1600 (H) x 1200 (V) 1600 (H) x 544 (V) 1600 (H) x 208 (V)
Imager Sensor:	1/3" CCD (ICX424AL) 1/3" CCD *(ICX424AQ)*	1/3" CCD (ICX204AL) 1/3" CCD *(ICX204AK)*	1/3" CCD (ICX445AL) 1/3" CCD *(ICX445AQ)*	1/2" CCD (ICX205AL) 1/2" CCD *(ICX205AK)*	1/1.8" CCD (ICX274AL) 1/1.8" CCD *(ICX274AQ)*
Signal Format:	Progressive: Monochrome or Color		Progressive: Monochrome or Color		
Maximum Frame Rates: *Full Scan* *1/2 Partial* *1/4 Partial*	60 fps 120 fps 240 fps	30 fps 60 fps 120 fps	22 fps 44 fps 89 fps	19 fps 38 fps 77 fps	15 fps 30 fps 60 fps
Pixel Clock Frequencies:	24.5454 MHz	29.5 MHz	36.818 MHz		
Trigger Mode:	Hardware & Software Trigger (Free-run / Edge preset / Pulse Width / Start & Stop)		Hardware & Software Trigger (Free-run / Edge preset / Pulse Width / Start & Stop)		
Trigger Controls:	Integration End Signal, Readout Signal Control, HD Trigger Timing Control		Integration End Signal, Readout Signal Control, HD Trigger Timing Control		
I/O Ports:	4 Programmable Input / Output Ports (2 input Ports & 2 Output Ports)		4 Programmable Input / Output Ports (2 input Ports & 2 Output Ports)		
Scanning Methods:	Full Progressive, Partial (1/1, 1/2, 1/4), Variable, Binning (B/W models)		Full Progressive, Partial (1/1, 1/2, 1/4), Variable, Binning (B/W models)		
Sync System:	Internal Sync		Internal Sync		
Shutter Speed:	Auto / Manual (Set via Software)		Auto / Manual (Set via Software)		
Minimum Illumination:	0.08 Lux @ F1.2, 50 IRE *2.24 Lux @ F1.2, 50 IRE*	0.11 Lux @ F1.2, 50 IRE *5.28 Lux @ F1.2, 50 IRE*	0.18 Lux @ F1.2, 50 IRE *3.23 Lux @ F1.2, 50 IRE*	0.12 Lux @ F1.2, 50 IRE *2.7 Lux @ F1.2, 50 IRE*	0.11 Lux @ F1.2, 50 IRE *1.39 Lux @ F1.2, 50 IRE*
Extended Low Light:	Extended Low Light Capability via Software Trigger		Extended Low Light Capability via Software Trigger		
Gain:	Auto / Manual (Analog and Digital Gains set independently via Software)		Auto / Manual (Analog and Digital Gains set independently via Software)		
Gamma:	Manual (Set via Software)		Manual (Set via Software)		
Lens Mount:	CS Mount / Micro Lens Mount		CS Mount / Micro Lens Mount	C-Mount	
White Balance:	*Auto / Manual / One-Shot (Set via Software)*		*Auto / Manual / One-Shot (Set via Software)*		
Video Output:	USB 2.0 High Speed		USB 2.0 High Speed		
Connectors:	Standard USB (Lock Down Type Available)		Mini USB (Lock Down Type Available) & USB Signal on the 12 pin Hirose		
Shock and Vibration:	Vibration: 10G (20 to 200Hz), Shock: 70G (3 directions, 3 times each)		Vibration: 10G (20 to 200Hz), Shock: 70G (3 directions, 3 times each)		
Input Voltage:	+5Vdc via USB port or 12 Pin Connector		+5Vdc via USB port or 12 Pin Connector		
Power Consumption:	1.75W, < 350mA	1.60W, < 320mA	2.15W, < 430mA	2.25W, < 450mA	2.50W, < 500mA
Operating Temperature:	0° ~ 40°C (32° ~ 104°F)		0° ~ 40°C (32° ~ 104°F)		
Storage Temperature:	-30° ~ 65°C (-22° ~ 149°F)		-30° ~ 65°C (-22° ~ 149°F)		
Dimensions:	51 (W) x 51 (H) x 35.7 (D) mm (2" x 2" x 1.4")		51 (W) x 51 (H) x 35.7 (D) mm (2" x 2" x 1.58")		
Weight:	Approximately 130g (5.58oz)		Approximately 130g (4.58oz)		

USB 2.0 Hardware Trigger Comparison Chart

Advanced Measu rement Software

For Sentech USB 2.0 Cameras

INTRODUCING A SOFTWARE SOLUTION
THAT WORKS FOR YOUR BUSINESS.

Features

- **MEASUREMENT CALIBRATION**

  Multiple value calibration available on 3 axes. Measurement tools include:

  - Point-to-Point
  - Line with Guides
  - Dual Cross Hair
  - Radius

- **ANNOTATION**

  Simple insertion of text, notes, labels, and markers during live video. Annotations can be recorded.

- **DRAWING**

  - Drawings can be recorded during video capture.
  - Still images can be captured to include free-hand drawings.

- **FOOT PEDAL CONTROL**

  USB input foot pedal can be setup with the software for taking snapshots and/or start/stop video recording.

- **IMAGE CAPTURE & RECORDING**

  - Start/Stop Keystroke Control
  - Image Capture with Thumbnails
  - Incremental file naming based on selected presets (names, time stamps, consecutive numbering system).

The new Sentech Advance Measurement Software provides additional functions and features beyond the standard Sentech Viewing Software. This package provides the user with object Measurement and Calibration tools, simple Annotation and Drawing tools, multiple methods of video and image capture and storage with auto incrimination. The new Sentech Advanced Measurement Software also supports a programmable, two-button USB foot pedal which is offered as an optional accessory.

FREE

30 DAY TRIAL SOFTWARE

Products

SOF-MEAS

SOF-MEAS is Sentech's Advanced Measurement Software. This provides measurement and calibration tools, video and image capture, annotation and drawing tools. This package will also support optional USB foot pedal control.

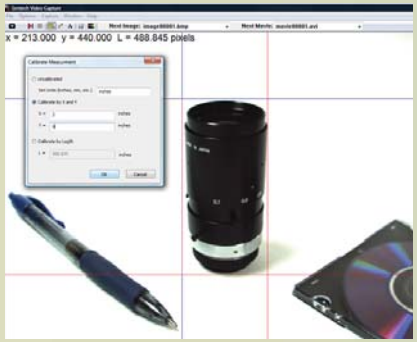
COM-FS1

COM-FS1 is an USB Foot Pedal for use with the Sentech Advanced Measurement Software; has assignable dual pedal functionality.

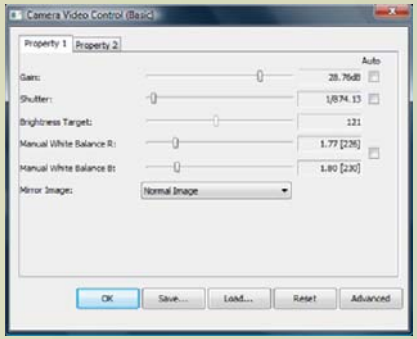
SOF-MEAS-FS

SOF-MEAS-FS is a combined package including the SOF-MEAS and the COM-FS1.

GUI Screen Shots



"Crosshairs" is one of the measurement tools available in the software. Screen shot unit of measure set to pixels.

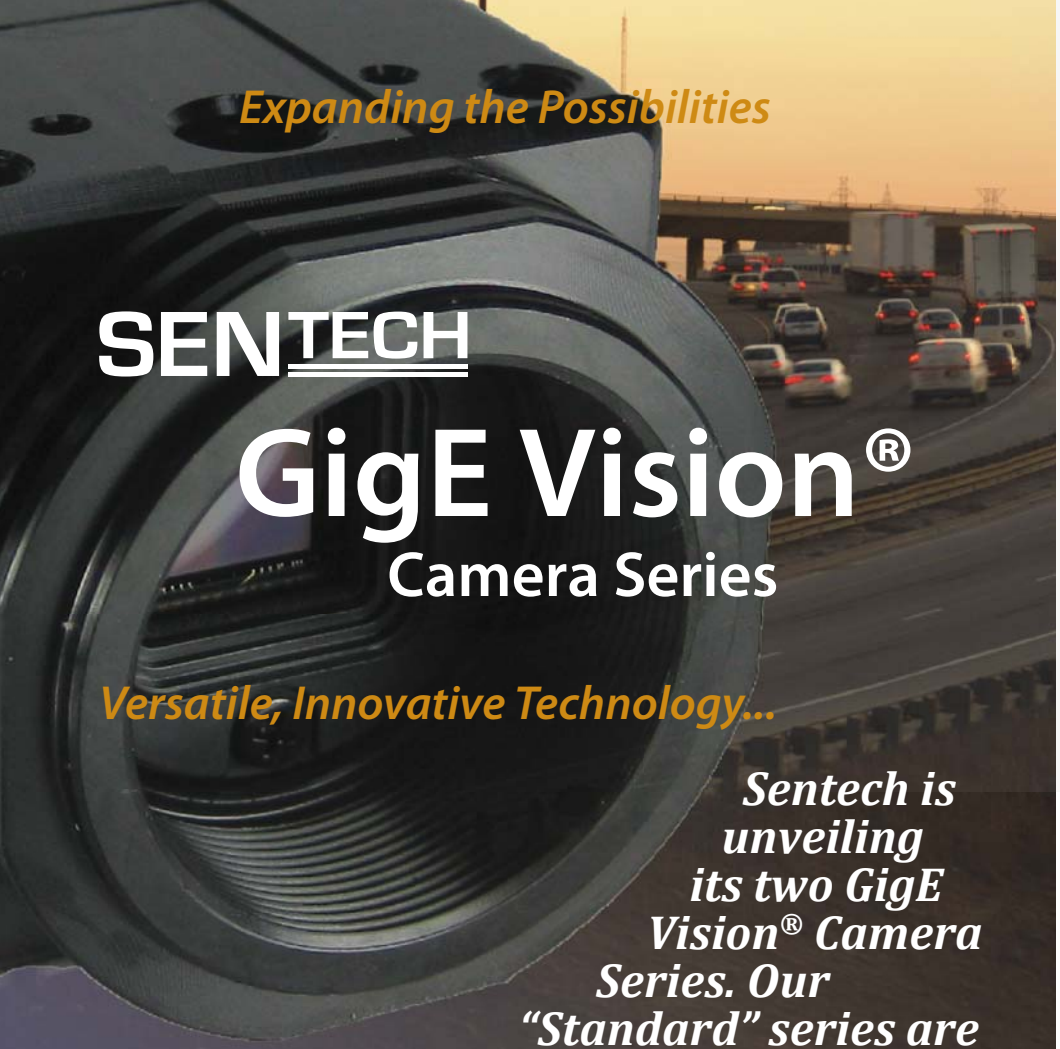


Simple settings tab that is created for an end-user level. Advanced setting tab is available for an engineering level.

System Requirements: Windows XP SP2 (32bit) or Windows Vista (32bit)
Camera Requirements: Sentech USB Cameras

www.SentechAmerica.com

1345 Valwood Parkway, Suite 320, Carrollton, TX 75006
Tel 972-481-9223 Fax 972-481-9209 Toll Free USA 1-877-SENTECH



Expanding the Possibilities

SENTECH

GigE Vision®

Camera Series

Versatile, Innovative Technology...

Sentech is unveiling its two GigE Vision® Camera Series. Our "Standard" series are ultra small, high performance GigE cameras that meet all industry standards for GigE Vision® and GenICam™. Second, our "Power Plus" series establishes innovative technology by introducing a user programmable FPGA with a 32MB memory and eight user configurable I/Os. This break-through technology meets all industry standards while allowing the user a unique opportunity to dramatically improve their system performance.

Key Features

- Precision Housing w/ Accurate CCD Alignment
- VGA *(0.3MP)* to QSXGA *(5MP)* Res. w/ High Speed Frame Rates
- Color *(RGB Bayer Filter)* or B/W
- DC Auto Iris Lens Driver
- Gamma Table *(Importing)*
- Region of Interest *(ROI)* - User Programmable
- Low Light Extended Integration
- Smear Reduction Functions

Power Plus

- User Programmable FPGA *(Xilinx or Altera)*
- 32MB User Memory
- 8 Opto-Isolated Configurable I/Os

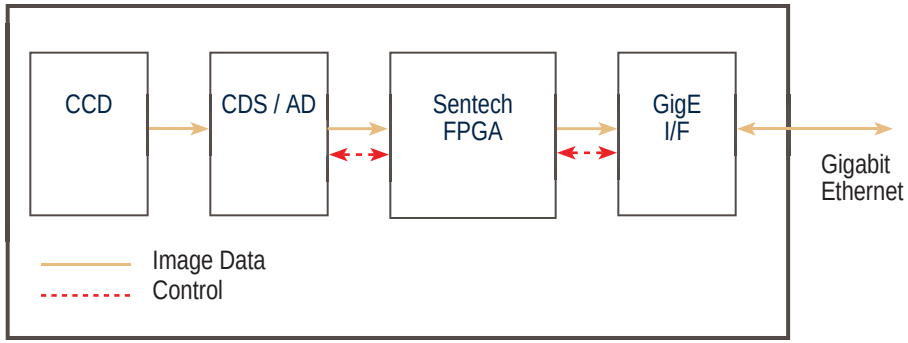
GigE Vision® Overview

Models	Sensor				Resolution					Frame Rate				
	1/3"	1/2"	1/1.8"	2/3"	VGA	XGA	SXGA	UXGA	QSXGA	15 fps	19 fps	30 fps	60 fps	94 fps
Monochrome GigE Cameras														
STC-GE33A	●				●							●	●	●
STC-GE83A	●					●						●		
STC-GE152A		●					●				●			
STC-GE202A			●					●		●				
STC-GE500A				●					●	●				
Color GigE Cameras														
STC-GEC33A	●				●							●	●	●
STC-GEC83A	●					●						●		
STC-GEC152A		●					●				●			
STC-GEC202A			●					●		●				
STC-GEC500A				●					●	●				

GigE Vision®
Standard Models

The "Standard" Sentech GigE camera is GigE Vision® and GenICam™ compliant. The camera is available in color or monochrome and comes in five resolutions from VGA *(0.3MP)* to QSXGA *(5MP)*. It features scan rates of 15 ~ 90 fps, communication over the 12 pin Hirose or the Ethernet connector and it has a DC Iris lens connector. Each unit includes the Sentech GigE Vision® Software and SDK.

standard | Block Diagram



gige | Accessories

Cables
CAT-5/6

Power Supply
12W-2P, 02, 03, 05

Lenses
Various C-Mount Lenses
Various Telecentric Lenses

Lens Mount
C-Adapter

Network Card
Intel Pro 1000

FPGA JIG
XILINX
Altera

QSXGA, *5 Megapixel*

STC-GE500A *(Monochrome)*
STC-GEC500A *(Color)*

- 2/3" Image Sensor
- 2448 (H) x 2058 (V)
- 15fps

UXGA, *2 Megapixel*

STC-GE202A *(Monochrome)*
STC-GEC202A *(Color)*

- 1/1.8" Image Sensor
- 1624 (H) x 1236 (V)
- 15fps

SXGA, *1.3 Megapixel*

STC-GE152A *(Monochrome)*
STC-GEC152A *(Color)*

- 1/2" Image Sensor
- 1360 (H) x 1040 (V)
- 19fps

XGA, *0.8 Megapixel*

STC-GE83A *(Monochrome)*
STC-GEC83A *(Color)*

- 1/3" Image Sensor
- 1024 (H) x 768 (V)
- 36fps

VGA, *0.3 Megapixel*

STC-GE33A *(Monochrome)*
STC-GEC33A *(Color)*

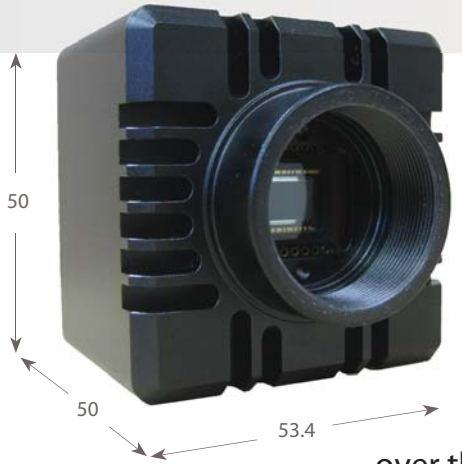
- 1/3" Image Sensor
- 648 (H) x 494 (V)
- 30, 60, 90fps

GigE Vision® *Standard* Camera Comparison Chart

Standard Models

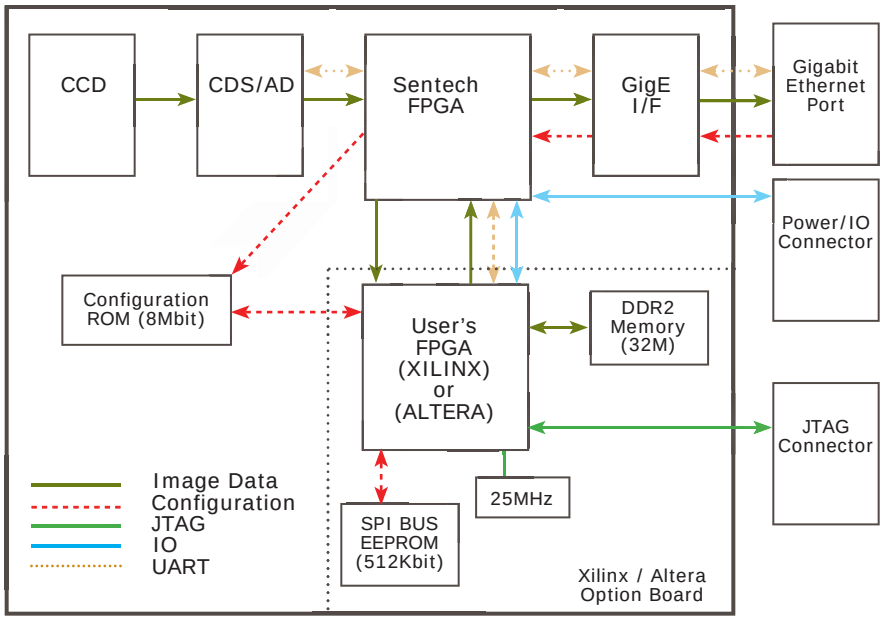
Monochrome / Color	STC-GE33A / STC-GEC33A	STC-GE83A / STC-GEC83A	STC-GE152A / STC-GEC152A	STC-GE202A / STC-GEC202A	STC-GE500A / STC-GEC500A
Resolution:	VGA (0.3 Megapixel)	XGA (0.8 Megapixel)	SXGA (1.3 Megapixel)	UXGA (2 Megapixel)	QSXGA (5 Megapixel)
Image Sensor:	1/3″ CCD (ICX424AL) 1/3″ CCD *(ICX424AQ)*	1/3″ CCD (ICX204AL) 1/3″ CCD *(ICX204AQ)*	1/2″ CCD (ICX205AL) 1/2″ CCD *(ICX205AK)*	1/1.8″ CCD (ICX274AL) 1/1.8″ CCD *(ICX274AQ)*	2/3″ CCD (ICX625AL) 2/3″ CCD *(ICX625AQ)*
Signal Format:	Progressive: Monochrome or Color		Progressive: Monochrome or Color		
Frame Rate:	30, 60, 90fps	36fps	19fps	15fps	
Active Picture Element:	648 (H) x 494 (V)	1024 (H) x 768 (V)	1360(H) x 1040 (V)	1624 (H) x 1236 (V)	2448 (H) x 2058 (V)
Vertical Frequency:	89.91 Hz	36.42 Hz	19.26 Hz	15.32 Hz	14.97 Hz
Horizontal Frequency:	47.2028 kHz	28.9907 kHz	20.5688 kHz	19.1761 kHz	31.1284 kHz
Pixel Clock Frequencies:	36.8181 MHz		36.8181 MHz		59.890898 MHz
Scanning Method:	Full, Partial (1/2, 1/4) and Variable Partial Scanning (B/W models)		Full, Partial (1/2, 1/4) and Variable Partial Scanning (B/W models)		
Sync System:	Internal		Internal		
Video Output:	Digital 8, 10 or 12 bit Raw Data or *RGB 8 bit*		Digital 8, 10 or 12 bit Raw Data or *RGB 8 bit*		
Interface:	IEEE802.3 (1000BASE-T)		IEEE802.3 (1000BASE-T)		
Protocol:	GenICam™ and GigE Vision® 1.0 compliant		GenICam™ and GigE Vision® 1.0 compliant		
ALC:	Auto iris lens, electronic iris and AGC (ON/OFF)		Auto iris lens, electronic iris and AGC (ON/OFF)		
Communication:	Through Ethernet Port		Through Ethernet Port		
Trigger Mode:	Edge Preset Trigger / Pulse Width Trigger (Unlimited extended exposure)		Edge Preset Trigger / Pulse Width Trigger (Unlimited extended exposure)		
Shutter Speed:	Long Exposure ~ 1/120,320 seconds		Long Exposure ~ 1/120,320 seconds		Long Exposure ~ 1/195,722 seconds
Minimum Illumination:	0.13 Lux @ F1.2 / *0.12 Lux @ F1.2*	0.14 Lux @ F1.2 / *0.14 Lux @ F1.2*	0.13 Lux @ F1.2 / *0.11 Lux @ F1.2*	0.06 Lux @ F1.2 / *0.085 Lux @ F1.2*	0.32 Lux @ F1.2 / *0.24 Lux @ F1.2*
Gain:	0 to 27 dB		0 to 27 dB		
S/N Ratio:	8bit ≤ 3 Digit (Gain 0dB); 10bit ≤ 12 Digit (Gain 0dB); 12bit ≤ 48 Digit (Gain 0dB)		8bit ≤ 3 Digit (Gain 0dB); 10bit ≤ 12 Digit (Gain 0dB); 12bit ≤ 48 Digit (Gain 0dB)		
Gamma:	Gamma 1.0 (Factory default) or uploadable gamma table		Gamma 1.0 (Factory default) or uploadable gamma table		
ROI Function:	Programmable ROI setting via the communication		Programmable ROI setting via the communication		
Smear Reduction:	Selectable ON/OFF via the communication		Selectable ON/OFF via the communication		
Color Interpolation:	*Available on RGB output*		*Available on RGB output*		
White Balance:	*Auto, manual and push-to-set white balance (is available on both Raw data output and RGB output)*		*Auto, manual and push-to-set white balance (is available on both Raw data output and RGB output)*		
DC Iris Lens Control:	Auto iris lens connector, DC drive type		Auto iris lens connector, DC drive type		
Lens Mount:	C-Mount		C-Mount		
Optical Filter:	No IR Cut Filter *(IR Cut Filter)*		No IR Cut Filter *(IR Cut Filter)*		
Optical Center Accuracy:	Positional Accuracy in H and V directions: +/- 0.31mm Rotational Accuracy of H and V: +/- 2.1 deg.		Positional Accuracy in H and V directions: +/- 0.31mm Rotational Accuracy of H and V: +/- 2.1 deg.		
Shock:	70G (3 directions, 3 times each)		70G (3 directions, 3 times each)		
Vibration:	10G (20 to 200Hz)		10G (20 to 200Hz)		
Input Voltage:	10.8 to 26.4Vdc		10.8 to 26.4Vdc		
Dimensions:	35 (W) x 35 (H) x 50.6 (D) mm (1.37″ x 1.37″ x 1.99″)		35 (W) x 35 (H) x 50.6 (D) mm (1.37″ x 1.37″ x 1.99″)		50 (W) x 50 (H) x 53.4 (D) mm (1.96″ x 1.96″ x 2.10″)

GigE Vision®
"Power Plus" Models



Sentech's "Power Plus" GigE camera is GigE Vision®and GenICam™ compliant. This camera features a user programmable FPGA, a 32MB DDR2 memory and 8 user configurable I/Os. This allows the user to program their own proprietary code and have complete control over the DDR2 memory allowing faster downstream system processing. The camera is available in color or monochrome and comes in 5 resolutions from VGA *(0.3MP)* to QSXGA *(5MP)*.

power plus | Block Diagram



QSXGA, *5 Megapixel*

STC-GE500OX/OA *(Monochrome)*
STC-GEC500OX/OA *(Color)*

- 2/3" Image Sensor
- 2448 (H) x 2058 (V)
- 15fps

UXGA, *2 Megapixel*

STC-GE202OX/OA *(Monochrome)*
STC-GEC202OX/OA *(Color)*

- 1/1.8" Image Sensor
- 1624 (H) x 1236 (V)
- 15fps

SXGA, *1.3 Megapixel*

STC-GE152OX/OA *(Monochrome)*
STC-GEC152OX/OA *(Color)*

- 1/2" Image Sensor
- 1360 (H) x 1040 (V)
- 19fps

XGA, *0.8 Megapixel*

STC-GE83OX/OA *(Monochrome)*
STC-GEC83OX/OA *(Color)*

- 1/3" Image Sensor
- 1024 (H) x 768 (V)
- 36fps

VGA, *0.3 Megapixel*

STC-GE33OX/OA *(Monochrome)*
STC-GEC33OX/OA *(Color)*

- 1/3" Image Sensor
- 648 (H) x 494 (V)
- 30, 60, 90fps

GigE Vision® *"Power Plus"* Camera Comparison Chart

"Power Plus" Models

Monochrome / *Color*	STC-GE33OX/OA *STC-GEC33OX/OA*	STC-GE83OX/OA *STC-GEC83OX/OA*	STC-GE152OX/OA *STC-GEC152OX/OA*	STC-GE202OX/OA *STC-GEC202OX/OA*	STC-GE500OX/OA *STC-GEC500OX/OA*
Resolution:	VGA (0.3 Megapixel)	XGA (0.8 Megapixel)	SXGA (1.3 Megapixel)	UXGA (2 Megapixel)	QSXGA (5 Megapixel)
Image Sensor:	1/3" CCD (ICX424AL) 1/3" CCD *(ICX424AQ)*	1/3" CCD (ICX204AL) 1/3" CCD *(ICX204AQ)*	1/2" CCD (ICX205AL) 1/2" CCD *(ICX205AK)*	1/1.8" CCD (ICX274AL) 1/1.8" CCD *(ICX274AQ)*	2/3" CCD (ICX625AL) 2/3" CCD *(ICX625AQ)*
Signal Format:	Progressive: Monochrome or Color				
Frame Rate:	30, 60, 90fps	36fps	19fps	15fps	
Active Picture Element:	648 (H) x 494 (V)	1024 (H) x 768 (V)	1360(H) x 1040 (V)	1624 (H) x 1236 (V)	2448 (H) x 2058 (V)
Vertical Frequency:	89.91 Hz	36.42 Hz	19.26 Hz	15.32 Hz	14.97 Hz
Horizontal Frequency:	47.2028 kHz	28.9907 kHz	20.5688 kHz	19.1761 kHz	31.1284 kHz
Pixel Clock Frequency:	36.8181 MHz		36.8181 MHz		59.890898 MHz
Scanning Method:	Full, Partial (1/2, 1/4), Variable, Binning (B/W models)				
Sync System:	Internal				
Video Output:	Digital 8, 10 or 12 bit Raw Data or *RGB 8 bit*				
Interface:	IEEE802.3 (1000BASE-T)				
Protocol:	GenICam™ and GigE Vision® 1.0 compliant				
ALC:	Auto iris lens, electronic iris and AGC (ON/OFF)				
Communication:	Through Ethernet Port				
Trigger Mode:	Edge Preset Trigger / Pulse Width Trigger (Unlimited extended exposure)				
Shutter Speed:	Long Exposure ~ 1/120,320 seconds		Long Exposure ~ 1/120,320 seconds		Long Exposure ~ 1/195,722 seconds
Minimum Illumination:	0.13 Lux @ F1.2 / *0.12 Lux @ F1.2*	0.14 Lux @ F1.2 / *0.14 Lux @ F1.2*	0.13 Lux @ F1.2 / *0.11 Lux @ F1.2*	0.06 Lux @ F1.2 / *0.085 Lux @ F1.2*	0.32 Lux @ F1.2 / *0.24 Lux @ F1.2*
Gain:	0 to 27 dB				
S/N Ratio:	8bit ≤ 3 Digit (Gain 0dB); 10bit ≤ 12 Digit (Gain 0dB); 12bit ≤ 48 Digit (Gain 0dB)				
Gamma:	1.0 (Factory default) or Downloadable gamma table				
ROI Function:	Programmable ROI setting via the communication				
Smear Reduction:	Selectable ON/OFF via the communication				
Color Interpolation:	*Available on RGB output*				
White Balance:	*Auto, manual and push-to-set white balance (is available on both Raw data output and RGB output)*				
DC Iris Lens Control:	Auto iris lens connector, DC drive type				
User Configurable Board:	**FPGA**: Xilinx: Spartan-3AXC3SD1800A; Altera: EPC340U484 **DDR2**: MT47H16M16BG-37E-B (Micron), 32MB **EEPROM**: M95512-RMN6TP (ST Micro), 512KB **Configuration ROM**: M25P80-VMP6G (ST Micro), 8MB				
Lens Mount:	C-Mount				
Optical Filter:	No IR Cut Filter *(IR Cut Filter)*				
Optical Center Accuracy:	Positional Accuracy in H and V directions: +/- 0.31mm Rotational Accuracy of H and V: +/- 2.1 deg.				
Shock:	70G (3 directions, 3 times each)				
Vibration:	10G (20 to 200Hz)				
Input Voltage:	+10.8 ~ 26.4Vdc via Power/IO Connector or Power Over Ethernet				
Dimensions:	50 (W) x 50 (H) x 53.4 (D) mm (1.96" x 1.96" x 2.10")				

Reliable, Compact Solution!

SENTECH

CameraLink®

Camera Series

Machine Vision Ready ...

The Sentech CameraLink® Camera Series is a full featured, cost effective, digital cube camera with sensors ranging from VGA to QSXGA. Its ultra-compact design allows the camera to fit into the tightest physical configurations. The series is available in color (RGB Primary Color Filter) or monochrome and features partial scanning with both pulse width or edge preset triggering.

Key Features

- Ultra-Compact Precision Metal Housing
- Accurate CCD Alignment
- Color *(RGB Bayer Filter)* and Monochrome
- High Frame Rate *(Ideal for High Speed Image Capture)*
- Trigger Modes *(with Reset & Non-Reset)*
  - Pulse Width and Edge Preset
- Multiple Trigger Channels *(CL Cable or Hirose Connector)*
- Low Heat Systems
- Remote Head and Power Over CameraLink® Models
- NI LabVIEW™ Compatible

CameraLink® Overview

Models	Sensor				Resolution					Frame Rate				
	1/3"	1/2"	1/1.8"	2/3"	VGA	XGA	SXGA	UXGA	QSXGA	15 fps	19 fps	30 fps	60 fps	90 fps
Monochrome CameraLink® Cameras														
STC-CL33A	●				●							●	●	●
STC-CL83A	●					●						●		
STC-CL152A		●					●			●	●			
STC-CL202A			●					●		●				
STC-CL232A			●					●				●		
STC-CL500A				●					●	●				
Color CameraLink® Cameras														
STC-CLC33A	●				●							●	●	●
STC-CLC83A	●					●						●		
STC-CLC152A		●					●			●	●			
STC-CLC202A			●					●		●				
STC-CLC232A			●					●				●		
STC-CLC500A				●					●	●				

CameraLink®
High Performance Models

QSXGA, *5 Megapixel*

STC-CL500A *(Monochrome)*
STC-CLC500A *(Color)*

- 2/3" Image Sensor
- Color and Monochrome
- 2448 (H) x 2058 (V)
- 16fps
- Control Software
- Triggering
- PoCL Available

This is a full featured cost effective QSXGA digital CameraLink® cube camera. This camera delivers a full 5 Megapixel resolution at 15 fps. It has a 2/3" CCD with RGB Primary Color Filter for Color or a Monochrome version both of which features partial scanning and triggering.

UXGA, *2 Megapixel*

STC-CL232A *(Monochrome)*
STC-CLC232A *(Color)*

- 1/1.8" Image Sensor
- Color and Monochrome
- 1620 (H) x 1236 (V)
- 30fps
- Control Software
- Triggering
- PoCL Available

30fps

This is a full featured cost effective UXGA digital CameraLink® camera. This camera delivers a full 2 Megapixel resolution at 30 fps. It has a 1/1.8" CCD with RGB Primary Color Filter for Color or a Monochrome version both of which features partial scanning and triggering.

cameralink® | Accessories

Lenses

Various C-Mount Lenses
Various Megapixel Lenses
Various Telecentric Lenses

Tripod Mount

TP-HCA

Remote Head Lenses

LEN-RCL33A-L3
LEN-RCL33A-L6
LEN-RCL33A-L16
LEN-RCL33A-L30

Cables *(Standard to Mini)*

CAB-CL2M-MINI
CAB-CL3M-MINI
CAB-CL5M-MINI
CAB-CL10M-MINI

Cables *(Mini to Mini)*

CAB-CL2M-M2M
CAB-CL3M-M2M
CAB-CL5M-M2M
CAB-CL10M-M2M

CameraLink®

Cubed & Remote Head Models

These are compact, full featured cost effective digital CameraLink® cube cameras. The series offers a various range of megapixels, resolutions and frame rates. The CCD sizes includes 1/3", 1/1.8" and 1/2" with RGB Primary Color Filter for Color or a Monochrome version. All models feature partial scanning and triggering.

UXGA, *2 Megapixel*

STC-CL202A *(Monochrome)*
STC-CLC202A *(Color)*

- 1/1.8" Image Sensor
- 1620 (H) x 1220 (V)
- 16fps

SXGA, *1.3 Megapixel*

STC-CL152A *(Monochrome)*
STC-CLC152A *(Color)*

- 1/2" Image Sensor
- 1360 (H) x 1024 (V)
- 15, 19fps

XGA, *0.8 Megapixel*

STC-CL83A *(Monochrome)*
STC-CLC83A *(Color)*

- 1/3" Image Sensor
- 1024 (H) x 768 (V)
- 30fps

VGA, *0.3 Megapixel*

STC-CL33A *(Monochrome)*
STC-CLC33A *(Color)*

- 1/3" Image Sensor
- 648 (H) x 494 (V)
- 30, 60, 90fps

Remote Head Models:

The STC-RCL33A and STC-RCLC33A are micro remote head VGA high speed machine vision CameraLink® cameras. This series features two styles of remote head which allows access to very small or tight spaces.

VGA, *0.3 Megapixel*

STC-RCL33A *(Monochrome)*
STC-RCLC33A *(Color)*

- 1/3" Image Sensor
- 648 (H) x 494 (V)
- 30, 60, 90fps
- Remote Head Models
- Two Head Types

STC-RCL33A-R3
12 (W) x 12 (H) x 44 (D) mm

STC-RCL33A-C3
17 (W) x 17 (H) x 10.5 (D) mm

Power Over CameraLink® Available:

All Sentech CameraLink® cameras are also available in Power Over CameraLink® models. Except for the power delivery methods, the mechanical features and physical back panels of the PoCL cameras are the same as the standard models.

CameraLink® Camera Comparison Chart

CameraLink® Models

Monochrome / Color	STC-CL33A / STC-CLC33A	STC-RCL33A / STC-RCLC33A	STC-CL83A / STC-CLC83A	STC-CL152A / STC-CLC152A	STC-CL202A / STC-CLC202A	STC-CL232A / STC-CLC232A	STC-CL500A / STC-CLC500A
Resolution:	VGA (0.3 Megapixel)		XGA (0.8 Megapixel)	SXGA (1.3 Megapixel)	UXGA (2 Megapixel)		QSXGA (5 Megapixel)
Image Sensor:	1/3″ CCD (ICX424AL) 1/3″ CCD *(ICX424AQ)*		1/3″ CCD (ICX204AL) 1/3″ CCD *(ICX204AQ)*	1/2″ CCD (ICX205AL) 1/2″ CCD *(ICX205AK)*	1/1.8″ CCD (ICX274AL) 1/1.8″ CCD *(ICX274AQ)*		2/3″ CCD (ICX625AL) 2/3″ CCD *(ICX625AQ)*
Signal Format:	Progressive: Monochrome or Color			Progressive: Monochrome or Color			
Frame Rate:	30, 60, 90fps		30fps	15, 19fps	16fps	30fps	16fps
Active Picture Element:	648 (H) x 494 (V)		1024 (H) x 768 (V)	1360 (H) x 1024 (V)	1620 (H) x 1220 (V)	1620 (H) x 1236 (V)	2448 (H) x 2058 (V)
Chip Size (mm):	5.79 (H) x 4.89 (V)		5.80 (H) x 4.92 (V)	7.60 (H) x 6.20 (V)	8.50 (H) x 6.80 (V)		9.93 (H) x 8.70 (V)
Cell Size (µm):	7.4 (H) x 7.4 (V)		4.65 (H) x 4.65 (V)	4.65 (H) x 4.65 (V)	4.4 (H) x 4.4 (V)		3.45 (H) x 3.45 (V)
Vertical Frequency:	31.47 (30fps) / 62.94 (60fps) / 94.784 (94fps) Hz		29.59 Hz	19.3 Hz	15.3164 Hz	30.854 Hz	16 Hz
Horizontal Frequency:	47.2028 kHz		23.23 kHz	20.57 kHz	19.176 kHz	38.352 kHz	33.264 kHz
Pixel Clock Frequency:	36.8181 MHz		29.5 MHz	36.8181 MHz		73.636 MHz	64 MHz
Scanning Method:	Full Scan / Partial (1/2, 1/4, Variable), Binning w/ B/W models			Full Scan / Partial (1/2, 1/4, Variable), Binning w/ B/W models			
Sync System:	Internal / External (HD / VD)			Internal / External (HD / VD)		Internal	
Communication:	RS232 via CameraLink® connector			RS232 via CameraLink® connector			
Trigger Mode:	Pulse Width Trigger (V Reset, Non Reset) Edge Preset Trigger (V Reset, Non Reset)			Pulse Width Trigger (V Reset, Non Reset) Edge Preset Trigger (V Reset, Non Reset)			
Shutter Speed:	OFF, 1/3 to 1/40,000 (30fps) OFF, 1/7 to 1/80,000 (60fps) OFF, 1/11 to 1/120,000 (94fps)		OFF, 1/5 to 1/96,000	OFF, 1/3 ~ 1/93,000 (15fps) OFF, 1/5 ~ 1/120,000 (19fps)	OFF, 1/4 ~ 1/120,000	OFF, 1/9 ~ 1/240,000	OFF, 1/8 ~ 1/209,000
Minimum Illumination:	0.12 Lux @ F1.2, 50 IRE *0.13 Lux @ F1.2, 50 IRE*	0.11 Lux @ F1.2, 50 IRE *0.11 Lux @ F1.2, 50 IRE*	0.14 Lux @ F1.2, 50 IRE *0.14 Lux @ F1.2 , 50 IRE*	0.12 Lux @ F1.2, 50 IRE *0.13 Lux @ F1.2, 50 IRE*	0.06 Lux @ F1.2, 50 IRE *0.08 Lux @ F1.2, 50 IRE*	0.7 Lux @ F1.2, 50 IRE *0.92 Lux @ F1.2, 50 IRE*	0.24 Lux @ F1.2, 50 IRE *0.32 Lux @ F1.2, 50 IRE*
Gain:	Fixed Gain: Adjustable 0 ~ 27 dB			Fixed Gain: Adjustable 0 ~ 27 dB		Fixed Gain: Adjustable (0 ~ 25dB)	Fixed Gain: Adjustable (0 ~ 18.309dB)
S/N Ratio:	8 bit ≤ 3 Digit (Gain 0dB) 10 bit ≤ 10 Digit (Gain 0dB)			8 bit ≤ 3 Digit (Gain 0dB) 10 bit ≤ 10 Digit (Gain 0dB)		8 bit ≤ 4 Digit (Gain 0dB) 10 bit ≤ 15 Digit (Gain 0dB)	8 bit ≤ 4 Digit (Gain 0dB) 10 bit ≤ 15 Digit (Gain 0dB) 12 bit ≤ 60 Digit (Gain 0dB)
Gamma:	1.0			1.0			
Lens Mount:	C-Mount	M10.5 (P=0.5) w/ male threads	C-Mount	C-Mount			
Video Output:	Digital 8 or 10 bit CameraLink® (Base Configuration)			Digital 8 or 10 bit CameraLink® (Base Configuration)			Digital 8/10/12 bit CameraLink®, 2 taps
Optical Filter:	w/ or w/o IR Cut Filter			w/ or w/o IR Cut Filter			
Optical Center Accuracy:	Positional accuracy of H and V directions: +/- 0.31mm Rotational accuracy of H and V: +/- 2.1°			Positional accuracy of H and V directions: +/- 0.31mm Rotational accuracy of H and V: +/- 2.1°			Positional: +/- 0.26mm Rotational: +/- 1.7 °
Shock:	70G (3 directions, 3 times each)			70G (3 directions, 3 times each)			
Vibration:	10G (20 to 200Hz)			10G (20 to 200Hz)			
Input Voltage:	12Vdc +/- 10%			12Vdc +/- 10%			
Power Consumption:	< 1.8W, 150mA			< 2.5W, 208mA	< 3.0W, 250mA	< 4.0W, 333mA	
Operating Temperature:	-5° ~ 50°C (23° ~ 122°F)			-5° ~ 45°C (23° ~ 113°F)		-5° ~ 40°C (23° ~ 104°F)	
Storage Temperature:	-30° ~ 65 °C (-22° ~ 140°F)			-30° ~ 65 °C (-22° ~ 140°F)			
Dimensions (mm):	28 (W) x 28 (H) x 40 (D) (1.10″ x 1.10″ x 1.57″)			28 (W) x 28 (H) x 40 (D) (1.10″ x 1.10″ x 1.57″)		28 (W) x 28 (H) x 47 (D) (1.10″ x 1.10″ x 1.85″)	35 (W) x 35 (H) x 40.7 (D) (1.37″ x 1.37″ x 1.60″)
Weight:	43g (1.51 oz)	150g (5.29 oz)	43g (1.51 oz)	43g (1.51 oz)		65.5g (2.31 oz)	80g (2.82 oz)

Versatile OEM Solution

SENTECH

Raw Digital Video Output

Camera Series

Ultra-Compact

Sentech's unique Raw Digital Video Output Camera Series is ideal for OEM vision system design. These cameras are similar to Sentech's CL Series, except for the video output format. The video format is an 8 or 10 bit parallel digital output. As a result, the user will shorten system design time, sustain reliable data transmission and achieve an overall cost reduction.

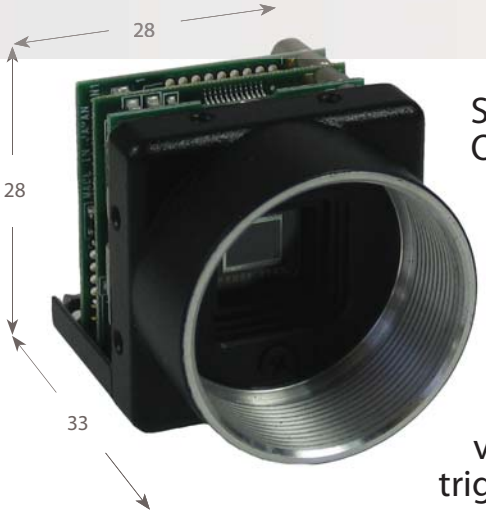
Key Features

- Raw Digital Video Output *(8 or10 bit parallel signal)*
- Accurate CCD Alignment *(Relative to Lens Mount)*
- VGA *(0.3MP)* to UXGA *(2MP)* Resolutions
- Color *(RGB Bayer Filter)* and Monochrome
- Semi-Board Type Configuration for OEM Application
- High Frame Rate Ideal for High Speed Image Capture
- 2 Trigger Modes *(with Reset & Non-Reset)*
  - Pulse Width and Edge Preset
- Progressive Scan CCDs
- Small Compact Size

Raw Digital Video Output Overview

Models	Sensor				Resolution				Frame Rate				
	1/3"	1/2"	1/1.8"	2/3"	VGA	XGA	SXGA	UXGA	15 fps	19 fps	30 fps	60 fps	94 fps
Monochrome Raw Data Output Cameras													
STC-B33A	●				●						●	●	●
STC-B83A	●					●					●		
STC-B152A		●					●		●	●			
STC-B202A			●					●	●				
Color Raw Data Output Cameras													
STC-BC33A	●				●						●	●	●
STC-BC83A	●					●					●		
STC-BC152A		●					●		●	●			
STC-BC202A			●					●	●				

Raw Digital Video Output
Semi-Board Series



Sentech's Raw Digital Video Output cameras are extremely compact and available with a color or monochrome CCD. This series features a VGA, XGA, SXGA and UXGA sensor, scan rates at 15 ~ 90fps, digital 8 or 10 bit parallel data output and variable integration shutter trigger.

UXGA, *2 Megapixel*

STC-B202A *(Monochrome)*
STC-BC202A *(Color)*

- 1/1.8" Image Sensor
- 1620 (H) x 1220 (V)
- 15fps

SXGA, *1.3 Megapixel*

STC-B152A *(Monochrome)*
STC-BC152A *(Color)*

- 1/2" Image Sensor
- 1360 (H) x 1040 (V)
- 15, 19fps

XGA, *0.8 Megapixel*

STC-B83A *(Monochrome)*
STC-BC83A *(Color)*

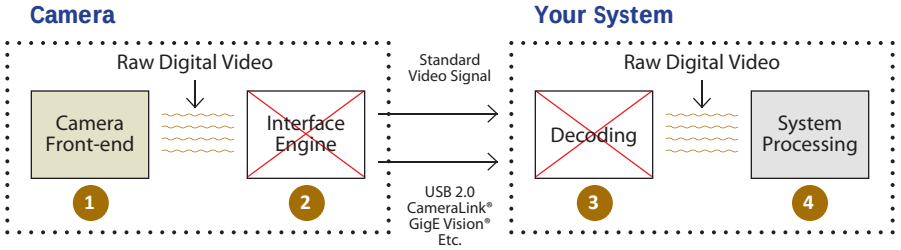
- 1/3" Image Sensor
- 1024 (H) x 768 (V)
- 30fps

VGA, *0.3 Megapixel*

STC-B33A *(Monochrome)*
STC-BC33A *(Color)*

- 1/3" Image Sensor
- 640 (H) x 480 (V)
- 30, 60, 94fps

concept diagram | Raw Digital vs. Typical Camera Interface



This series of cameras allows the user to take raw digital video directly into their system bypassing the standard video interface and decoding *(See steps 2 to 3 above).*

Resulting In:

- Fast Reliable Video Data Transmission
- Reduced Design Time
- System Cost Reduction

raw digital video output | Accessories

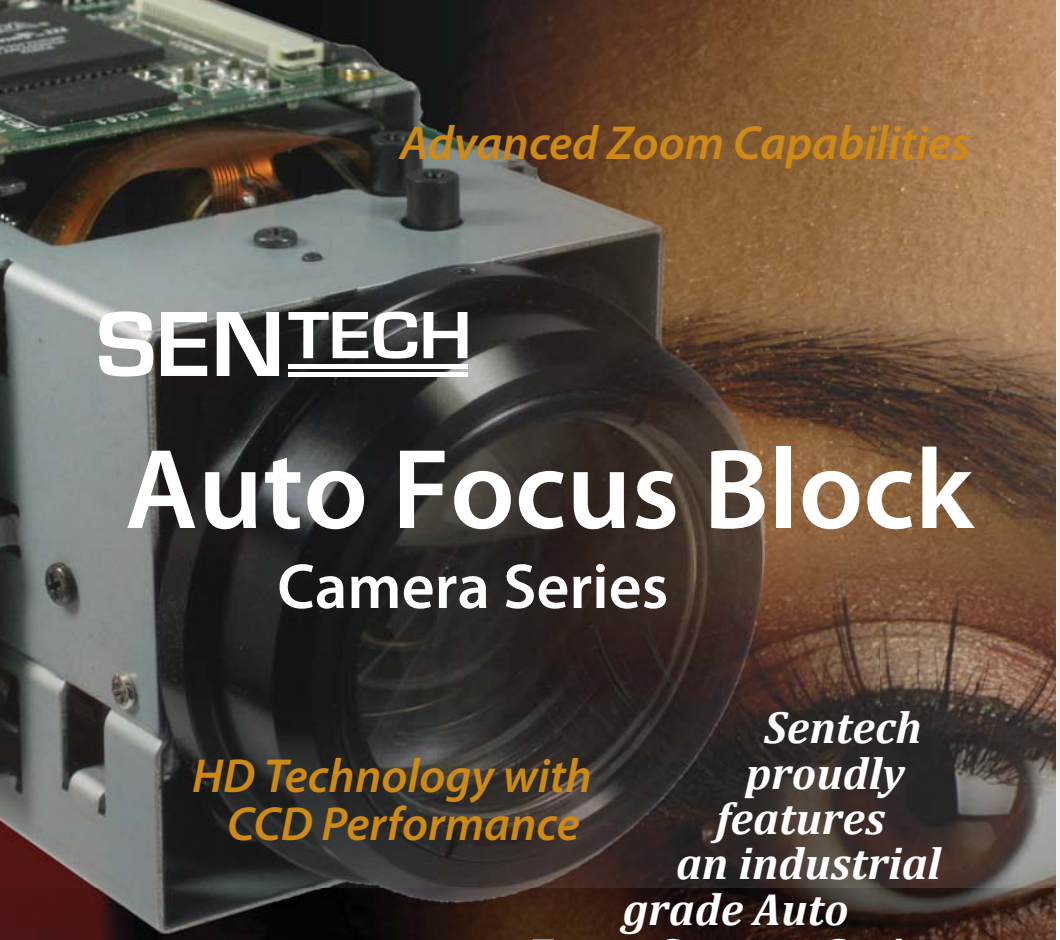
Lenses

Various C-Mount Lenses

Raw Digital Video Output
Camera Comparison Chart

Raw Digital Video Output Models

Monochrome / *Color*	STC-B33A / *STC-BC33A*	STC-B83A / *STC-BC83A*	STC-B152 / *STC-BC152*	STC-B202 / *STC-BC202*
Resolution:	VGA (0.3 Megapixel)	XGA (0.8 Megapixel)	SXGA (1.3 Megapixel)	UXGA (2 Megapixel)
Image Sensor:	1/3″ CCD (ICX424AL) 1/3″ CCD *(ICX424AQ)*	1/3″ CCD (ICX204AL) 1/3″ CCD *(ICX204AK)*	1/2″ CCD (ICX205AL) 1/2″ CCD *(ICX205AK)*	1/1.8″ CCD (ICX274AL) 1/1.8″ CCD *(ICX274AQ)*
Signal Format:	Progressive: Monochrome or Color			
Frame Rate:	30, 60, 94fps	30fps	15, 19fps	15fps
Active Picture Element:	648 (H) x 494 (V)	1024 (H) x 768 (V)	1360 (H) x 1040 (V)	1620 (H) x 1220 (V)
Chip Size (mm):	5.79 (H) x 4.89 (V)	5.8 (H) x 4.92 (V)	7.6 (H) x 6.2 (V)	8.5 (H) x 6.8 (V)
Cell Size (µm):	7.4 (H) x 7.4 (V)	4.65 (H) x 4.65 (V)	4.65 (H) x 4.65 (V)	4.4 (H) x 4.4 (V)
Vertical Frequency:	31.47 (30fps) / 62.94 (60fps) / 94.784 (94fps) Hz	29.59 Hz	15.28 (15fps) / 19.3 (19fps) Hz	15.3164 Hz
Horizontal Frequency:	15.7343 (30fps) / 31.4685 (60fps) / 47.2028 (90fps) kHz	23.23 kHz	15.998 (15fps) / 20.57 (19fps) kHz	19.176 kHz
Pixel Clock Frequency:	12.2727 (30fps) / 24.5454 (60fps) / 36.8181 (90fps) MHz	29.5 MHz	28.6363 (15fps) / 36.8181 (19fps) MHz	36.8181 MHz
Scanning Method:	Full, Partial (1/2, 1/4), Variable Partial Scanning and Binning (B/W models)			
Sync System:	Internal / External (HD / VD)			
Communication:	RS232 via DF12-36DS-0.5V connector			
Trigger Mode:	Edge Preset Trigger (V-reset, Non-reset) Pulse Width Trigger (V-reset, Non-reset)			
Shutter Speed:	OFF, 1/3 ~ 1/40,000 (30fps) OFF, 1/7 ~ 1/80,000 (60fps) OFF, 1/11 ~ 1/120,000 (90fps)	OFF, 1/5 to 1/96,000	OFF, 1/3 ~ 1/93,000 (15fps) OFF, 1/5 ~ 1/120,000 (19fps)	OFF, 1/4 ~ 1/120,000
Minimum Illumination:	0.12 Lux @ F1.2, 50 IRE *0.13 Lux @ F1.2, 50 IRE*	0.14 Lux @ F1.2, 50 IRE *0.14 Lux @ F1.2, 50 IRE*	0.11 Lux @ F1.2, 50 IRE *0.13 Lux @ F1.2, 50 IRE*	0.06 Lux @ F1.2, 50 IRE *0.08 Lux @ F1.2, 50 IRE*
Gain:	Fixed Gain: Adjustable 0 ~ 27 dB			
S/N Ratio:	@ 8bit output: ≤ 3 Digit (Gain 0 dB) @ 10bit output: ≤ 10 Digit (Gain 0 dB)			
Gamma:	1.0			
Lens Mount:	C-Mount			
Interface Connector:	DF12-36DS-0.5V (Hirose)			
Optical Filter:	No IR cut filter			
Optical Center Accuracy:	Positional Accuracy in H and V directions: +/- 0.31mm Rotational Accuracy of H and V: +/- 2.1 deg.			
Input Voltage:	12Vdc ± 10%			
Power Consumption:	< 1.8W, 150mA	< 1.8W, 150mA	< 2.5W, 208mA	< 3.0W, 250mA
Operating Temperature:	Depends on: 1) System design 2) System heat management conditions			
Storage Temperature:	-30° ~ 65°C (-22° ~ 149°F)			
Dimensions:	28 (W) x 28 (H) x 33 (D) mm (1.1″ x 1.1″ x 1.29″)			
Weight:	26g (0.91 oz)			



Advanced Zoom Capabilities

SENTECH

Auto Focus Block

Camera Series

HD Technology with CCD Performance

Sentech proudly features an industrial grade Auto Focus Camera Series specifically designed for medical, low vision and industrial applications. Sentech has both High Definition and Standard Resolution Block Cameras. Our new HD auto focus camera (STC-AF133) is a digital output CCD based camera with an 18X zoom lens. The STC-AF133 features true HD 720p resolution and outputs 16x9 image at 60fps. Our standard auto focus block cameras (STC-AF66 & STC-AF56) are available in both standard and high resolution. All Sentech block cameras have full "Low Vision" functionality built into the camera.

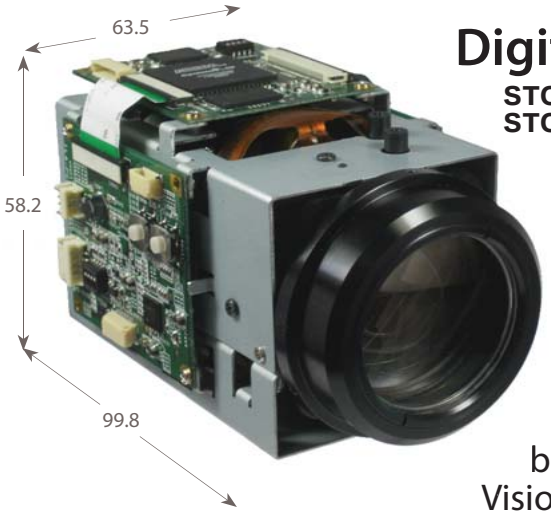
Key Features

- Powerful 18X & 22X Optical Zoom Capabilities
- 3 Base Models with HD720p, 480 TV Lines, 330 TV Lines
- RS232 Serial Communication
- Low Light Extended Integration
- Direct Connection to TFT Computer Type Monitors
- Optional 25cm Close-up Lens
- Manual Focus Override
- AF Stability *(Reduces Hunting During Target Movement)*
- Full Low Vision Features
  - 3 Independently Programmable Image Modes
  - 30 Combinations of Pseudo Colors including Super Bright Mode
  - Masking & Line Generation
  - Digital Zoom *(Some Models)*
  - Image Freeze *(Some Models)*
  - Horizontal & Vertical Flip *(Some Models)*

Auto Focus Overview

Models	Sensor		Resolution			Format		Optical Zoom Magnification	
	1/3"	1/6"	Standard	High Res	HD	Analog	Digital	18X	22X
High Definition Models									
STC-AF133A or B	●				●		●	●	
Standard Models									
STC-AF56A or B		●	●			●			●
STC-AF66A or B		●		●		●			●
STC-AF66EA or B		●		●		●			●

Auto Focus Block
Digital HD Models



Digital, *High Definition*

STC-AF133A *(w/o Close-up Lens)*
STC-AF133B *(w/ Close-up Lens)*

The *STC-AF133* HD Auto Focus is the newest addition to Sentech's Auto Focus Block camera line. It is our first High-Definition auto focus block camera, ideal for Low Vision Systems, industrial and medical applications. This CCD based camera outputs a 720p, 16 x 9 image and has complete "on-camera" Low Vision processing. This product features an 18x optical zoom lens along with user-programmable digital zoom.

- CCD Auto Focus Block Camera
- 18x Optical Zoom and Programmable Digital Zoom
- 720p Resolution *(16 x 9 Aspect Ratio)*
- True 60fps
- DVI Video Output *(via HDMI connector)*
- Low Light Stop/Start Integration Control
- RS232 Communication with Sentech DSP Software and Sentech Protocol
- Extremely Fast Auto Focus and Zoom
- AF Stability *(Reduces Hunting During Target Movement)*
- Optional 25cm Close-up Lens
- Removable IR Filter Selectable via Software
- Full "Low Vision" Features
  - Independently Programmable Text, Picture and Pseudo Color Modes (Including Super Bright Mode)
  - 30 Pseudo Color Combinations
  - Adjustable Horizontal & Vertical Line Marker and Masking
  - Freeze Frame
  - Six-way Image Flip
  - Manual Focus Override

auto focus | Accessories

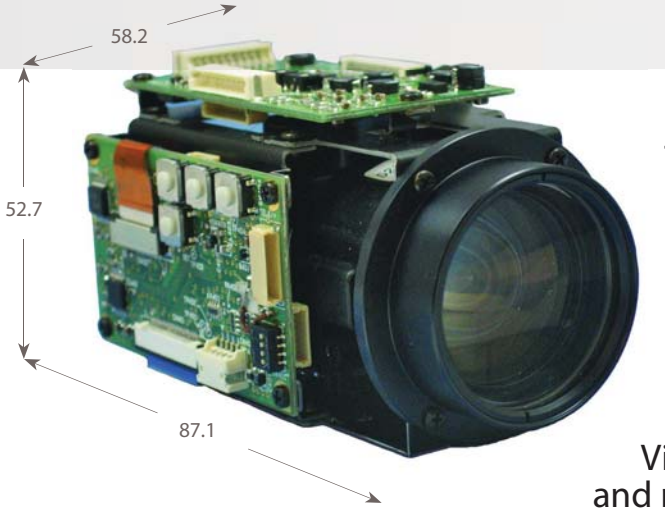
Cables
mini HDMI to HDMi
mini HDMI to DVI

Adaptors
Mini HDMI to Standard HDMI
HDMI to DVI

Lenses
25cm Close-up

Lens Mount
Jig-Color USB

Auto Focus Block
Analog Models



The *STC-AF66* Auto Focus block camera features a high resolution CCD (768 x 494), complete "on-camera" Low Vision processing and multiple outputs including VGA RGB. With the optional dual-element close up lens, the camera can auto focus through the entire zoom range at a target only 25cm away from the camera.

NTSC, *High Resolution*

STC-AF66A *(w/o Close-up Lens)*
STC-AF66B *(w/ Close-up Lens)*

- 1/6" CCD
- 768 (H) x 494 (V)
- 60Hz

NTSC, *High Resolution*

STC-AF66EA *(w/o Close-up Lens)*
STC-AF66EB *(w/ Close-up Lens)*

- 1/6" CCD
- 768 (H) x 494 (V)
- 60Hz

Features de-interlace processing for no flicker and higher vertical resolution.

NTSC, *Standard Resolution*

STC-AF56A *(w/o Close-up Lens)*
STC-AF56B *(w/ Close-up Lens)*

- 1/6" CCD
- 512 (H) x 492 (V)
- 60Hz

The *STC-AF56* has all of the same Low Vision Magnifier Reading system features and "on-camera" processing as the STC-AF66 camera. The STC-AF56 has a standard resolution (510 x 494) CCD. This camera also has an optional dual-element close up lens, which allows the camera to auto focus through the entire zoom range at a target only 25cm away.

- Full Optical Zoom 22x *(47x magnification on 17" monitor)*
- Direct connection to TFT Computer or Video Monitors
- Auto Focus Stability *(Reduces hunting during target movement)*
- Auto Focus Tracking *(When object height changes)*
- Manual Focus Override
- Normal, High Contrast & Super Contrast Modes
- 30 Combinations of Pseudo Colors
- Normal / Mirror Image Selectable
- RS232C Communication for Camera Control

Auto Focus Block Camera Comparison Chart

Auto Focus Models

w/o Close-up Lens *w/ Close-up Lens*	STC-AF133A *STC-AF133B*	STC-AF56A *STC-AF56B*	STC-AF66A *STC-AF66B*	STC-AF66EA *STC-AF66EB*
Image Sensor:	1/3" SXGA CCD (ICX445AKA)	1/6" CCD (ICX296AKA)	1/6" CCD (ICX238AKE)	
Resolution:	720p	330 TV Lines	480 TV lines	
Active Picture Element:	1280 (H) x 720 (V)	512 (H) x 492 (V)	768 (H) x 494 (V)	
Scanning System:	Color Progressive	Interlaced / Non-Interlaced		
Scanning Frequency:	50 Hz and 60 Hz (switchable)	60 Hz		
S/N Ratio:	50dB (AGC On)	>48dB (AGC Off)		
Minimum Illumination:	10 Lux @ F1.6	0.5 Lux @ F1.6	8 Lux @ F1.6	
Sync System:	Internal	Internal / External		
Video Output:	HD 720P; DVI 1.0 conformity; RGB, 1280 (H) x 720 (V), 59.94 Hz	NTSC Composite, Y/C, RGB Interlace, RGB progressive out for PC monitors (VGA compatible)		
Shutter Speed:	Selectable shutter speeds via the serial communication	Selectable shutter speeds via the serial communication		
Gain:	Adjustable gain via the serial communication	Adjustable gain via serial communication or AGC (On/Off)		
Gamma:	Fixed values via the serial communication	Fixed values via the serial communication		
White Balance:	Auto, 4 positions of the fixed white balance Selectable white balance via the serial communication	Selectable auto or fixed white balance via serial communication Auto: The range is 2800K to 7000K Fixed: 3 positions (3200K, 4100K and 5100K)		
Video Processing:	Normal, High Contrast & Super High Contrast Mode High Contrast Mode Includes: Negative/Positive (Selectable) 30 Pre-Programmed Pseudo Colors Combinations (user definable)	Normal, High Contrast & Super High Contrast Mode High Contrast Mode Includes: Negative/Positive (Selectable) 30 Pre-Programmed Pseudo Colors Combinations (user definable)		
AF Lens Control:	Optical Zoom: Position via the serial communication or by push button Focus: Auto / Manual / Push-set via the serial communication IRIS: Auto / Manual / Push-set via the serial communication	Focus: Auto, Manual Focus or Auto with manual override Zoom: Zoom position controllable via the serial communication		
Zoom Range:	14.7 ~ 84.6mm (18x Optical Zoom Range) + Digital Zoom Fixed zoom positions via the serial communication or by push button	3.9 ~ 85.8mm (22x Optical Zoom Range)		
AF Hunting Control:	Selectable ON/OFF via the serial communication	Selectable ON/OFF via the serial communication		
Line Generator:	Thickness, Color, Position & Orientation (Horizontal and/or Vertical) via the serial communication	Thickness, Color, Position & Orientation (Horizontal and/or Vertical) via the serial communication		
Shadow Mask Generator:	Darkness, Position & Orientation (Horizontal and/or Vertical) via the serial communication	Darkness, Position & Orientation (Horizontal and/or Vertical) via the serial communication		
Character Generation:	Built-in character generation function via the serial communication	Built-in full screen character generation function via the serial communication		
Mirror Mode:	Normal / Horizontal / Vertical / Hor. and Ver. (180° rotated image) mirror image Selectable via the serial communication	Normal or Mirror Image (Horizontally Reversed) via serial communication		
Communication:	RS232C serial communication	RS232 serial communication		
Software Control:	All camera DSP and lens setup parameters are controlled via the serial communication	All camera DSP and lens setup parameters are controlled via the serial communication		
Input Voltage:	+12Vdc (7~15Vdc)	+12Vdc (7~15Vdc)		
Power Consumption:	350mA at +12Vdc	250mA at +12Vdc		
Temperature:	Operational: -5° ~ 45°C (14° ~ 113°F); Storage: -30° ~ 65°C (-22° ~ 149°F)	Operational: -5° ~ 45°C (14° ~ 113°F); Storage: -30° ~ 65°C (-22° ~ 149°F)		
Dimensions:	63.5 (W) x 58.2 (H) x 91.5 (D) mm / *63.5 (W) x 58.2 (H) x 99.8 (D) mm* (2.50" x 2.29" x 3.60") / *(2.50" x 2.29" x 3.92")*	58.2 (W) x 52.7 (H) x 80 (D) mm / *58.2 (W) x 52.7 (H) x 87.1 (D) mm* (2.29" x 2.07" x 3.14") / *(2.29" x 2.07" x 3.42")*		
Weight:	235g (8.28oz) / *249g (8.80oz)*	165g (5.82oz) / *185g (6.52oz)*		

SENTECH

Specialty

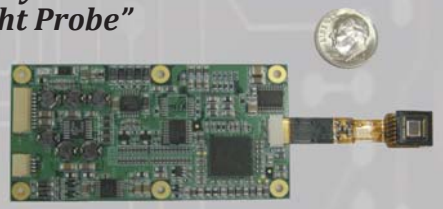
Camera Series

In addition to our traditional industrial and medical cameras, Sentech also has "Specialty" cameras. In this section of the catalog, we will introduce three groups of specialty cameras made by Sentech.

Specialty Overview

Models	Sensor				Imager		Type						
	1/18"	1/10"	1/4"	1/3"	CCD	CMOS	Board	Board HS	Dome	Wedge	Wedge IR	Hand Held Led Display	Hand Held USB 2.0
"Nite Probe" Models													
STC-UE54			●		●		●						
STC-HUE64			●		●			●					
Transit Models													
STC-632DLx				●	●				●				
STC-632WLx				●	●					●			
STC-632WLx-IR				●	●						●		
Borescope Models													
STC-IE118M-15	●					●						●	
STC-IE310USB		●				●							●

Security "Night Probe"

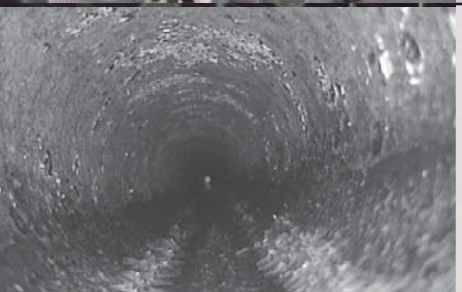


*The **"Night Probe"** camera was specifically designed to provide video in very low light environments. This remarkable analog video cameras can "see" with virtually no visible light. Its compact size and board level OEM configuration makes it ideal for system design.*

See page 60-61

Public / Military Transportation

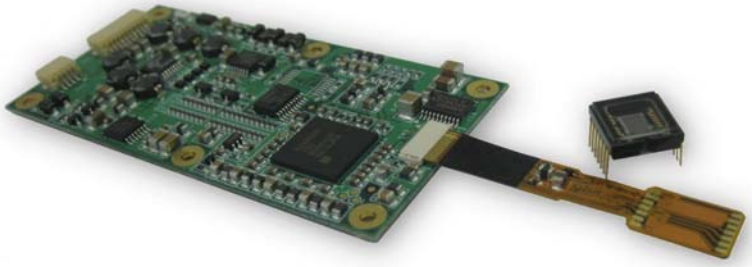
*Sentech's family of **Transit Cameras** have an installed base of over 38,000 units in some of the largest transit authorities in America. The cameras are composed of two key parts, the camera module and the housing, both components were specifically designed for the transit market. These are not low-end security cameras. They are rugged systems designed specifically for the demanding environment of transit buses, trains, etc.* *See page 62-63*



Industrial Borescopes

*Sentech's **Industrial Borescopes** feature both USB and Video output cameras. The USB output model is designed for computer use and display. The video output model has an integrated 2" LCD screen and RCA jack video output connection. Both cameras generate excellent imaging and an ease of use.* *See page 64-65*

Security *Night Probe* Camera Series



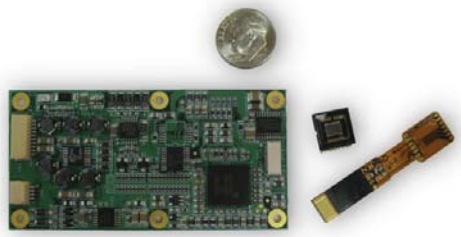
Designed specifically for police and military use, this ultra-compact series has the ability to "see" in completely dark environments without IR or visible spectrum lighting. It has internal/external sync, RS232C communication, both composite and Y/C video outputs.

series | Accessories

Due to the OEM nature of this camera, there are no assignable accessories specifically for this product.

Depending on product use, various standard accessories may be applicable.

Please contact us for your specific needs.



night probe | Specifications

Models	STC-UE54 *(Standard Resolution)*	STC-HUE64 *(High Resolution)*
Image Sensor:	1/4" EIA CCD (ICX226AL)	1/4" EIA CCD (ICX278AL)
Horizontal Resolution:	380 TV Lines	570 TV Lines
Scanning Method:	2:1 Interlace	
Frame Rate:	Variable, from 3 ~ 30fps (self regulating)	
Effective Picture Element:	512 (H) x 492 (V)	768 (H) x 494 (V)
Horizontal Frequency:	15.734 kHz	
Vertical Frequency:	59.94 Hz	
Chip Size:	4.34 (H) x 3.69 (V) mm	4.43 (H) x 3.69 (V) mm
Cell Size:	7.15 (H) x 5.55 (V) µm	4.75 (H) x 5.55 (V) µm
Gain:	AGC ON	
Gamma:	0.45	
Sync System:	Internal / External (Automatically switch)	
Communication:	RS232C via CN2 (SM04B-SRSS-TB) connector	
Electronic Iris:	1/1 ~ 1/10,000 seconds	
Mirror Image:	Normal / Horizontal / Vertical / Horizontal and Vertical (180 deg. retated image) mirror image	
DSP:	R2A45201BG (Renesas)	
Video Output:	1.0 Vp-p 75Ω, Y/C RS-170 and NTSC standards compatible. Both composite and Y/C.	
Lens Mount:	None	
Input Voltage:	4.5Vdc ~ 5.5 Vdc	
Power Consumption:	Less than 1.0 W	
Operating Temperature:	-5° ~ 45° C (23° ~ 113° F)	
Storage Temperature:	-30° ~ 65° C (-22° ~ 149° F)	
Dimension - *Head Model* - *CCU*	 10 (H) x 44 (W) x 3.65 (D) mm (0.39" x 1.73" x 0.14") 38 (H) x 75 (W) x 5 (D) mm (1.49" x 2.95" x 0.19")	
Weight:	23g (0.81 oz.)	

Designed Specifically for:

Public/Military Transportation Vehicles

Sentech Transit Camera

The Sentech Transit Cameras are specifically designed for mobile vehicles where durability and image performance are critical. Our transit cameras will work with virtually any transit recorder, analog or digital. The Sentech Transit Cameras address two critical areas of performance in the transit industry. First, the ability to take good usable images in a variety of lighting conditions. Second, the ability to have a clear image from a close-up target to a distant target. Our housings are designed for fast, easy installation and maintenance. We will gladly put our Transit Cameras in a side by side performance/durability test against any competitor. If your organization needs the best Transit Cameras at the lowest price, then please give us a call.

Sentech's IR Illumination (Day/Night) Transit Camera

Our IR Transit Camera was designed specifically for the public transportation industry. It uses special IR illumination that resolve two big problems on trains and buses. First, "hot spots" on close-up targets are virtually eliminated. Second, one unit can evenly illuminate the entire interior of a bus. The Sentech IR camera is also designed for easy installation and maintenance.

transit cameras | Specifications

Models	NTSC	PAL
Image Sensor:	1/3" CCD (ICX638AK)	1/3" CCD (ICX639AK)
Horizontal Resolution:	480 TV Lines	
Frame Rate:	30 fps	
Effective Picture Element:	768 (H) x 494 (V)	752 (H) x 582 (V)
Gain:	AGC / Fixed (Software Selectable)	
S/N Ratio:	>48dB (Gain 0dB)	
Minimum Illumination:	0.17 Lux @ F1.2, AGC On, 20 IRE	0.14 Lux @ F1.2, AGC On, 20 IRE
White Balance:	Auto White Balance (Manual via DSP)	
Electronic Shutter:	1/60 *(1/50)* ~1/100,000	
Electronic Iris:	1/60 ~ 1/100,000	1/50 ~ 1/100,000
Mirror Image:	Normal / Mirror (Software or Hardware Selectable)	
Aperture (Sharpness):	On/Off (User Selectable) / Programmable	
Lens Mount:	Micro Lens Lock Mount	
Microphone:	Available on Select Models (Includes volume control)	
LED Indicator:	3 modes selectable: On/Off, Blinking, Steady	
Shock and Vibration:	Vibration: 10G (20 to 200Hz) Shock: 70G (3 directions, 3 times each)	
Input Voltage:	+ 7V ~ +13Vdc	
Operating Temperature:	-10° ~ 50°C (14° ~ 122°F)	
Storage Temperature:	-30° ~ 65°C (-22° ~ 149°F)	

Transit Domes Configuration

Available in metal casting or glass-reinforced plastic.

Transit Wedges Configuration

Available in metal casting or glass-reinforced plastic.

Transit Wedge IR Illumination Configuration

Available in glass-reinforced plastic.

High Impact Metal Casting:

Optional Microphone and LED Light

Metal Wedge

Metal Wedge with optional Microphone and LED

Metal Dome

High Impact Glass-Reinforced Plastic:

Includes Microphone and LED Light

Plastic Dome

Plastic IR Wedge

Plastic Wedge

5 Configurations: High Impact Metal Dome, High Impact Metal Wedge, High Impact Plastic Dome, High Impact Plastic Wedge, High Impact Plastic Day/Night Wedge

Durable: These cameras are specifically designed for rough environments. Shock rated at 70 G's. Vibration rated at 10 G's. Supports wide temperature range.

Easy Installation: Designed for fast, easy, low cost installation.

Programmable DSP: DSP is programmable in order to maximize performance across environmental demands of public transportation vehicles.

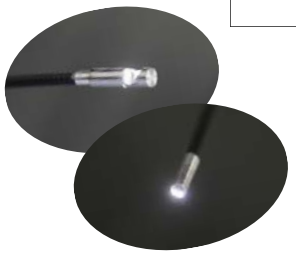
Small Size:

Domes: 89 (W) x 66 (H) x 89 (D) mm (3.5" x 2.6" x 3.5")
Wedges: 89 (W) x 66 (H) x 89 (D) mm (3.5" x 2.6" x 3.5")
IR Wedge: 89 (W) x 84.8 (H) x 89 (D) mm (3.5" x 3.3" x 3.5")

Industrial *Handheld*
Borescope Camera Series

STC-IE118M-15 *(NTSC)*

The STC-IE118M-15 is a complete hand held ***LED video based borescope***. This unit features a 2" LCD screen, an SD card slot for image capture, a self contained LED adjustable light source and a phone jack video-out connection allowing video to be displayed on a TV monitor. The standard flexible probe is 1.5 meters and is available in up to 5 meter configurations.



SD Card Slot

STC-IE310USB-1 *(USB 2.0)*

The STC-IE310USB-1 is a ***flexible USB based borescope***. The flexible probe end is 1.5 meters and the unit features a self-contained adjustable LED light source. This camera plugs straight into a computer via a USB port. The image is displayed on the computer screen.

borescope | Specifications

Models	STC-IE118M-15	STC-IE310USB-1
Imager:	1/18" CMOS	1/10" CMOS
Effective Picture Element:	320 (H) x 240 (V)	640 (H) x 480 (V)
Frame Rate:	30 fps	15 fps
S/N Ratio:	35 dB	35 dB (AGC Off)
Monitor:	2" Color TFT LCD	Via PC
Video Output:	NTSC	USB 2.0
Connector:	Phone Jack 3.5 mm - Video Out	USB A Type
Event Recording:	SD Card Slot (Up to 2GB)	Via PC
Shutter Speed:	1/60s ~ 5.7µs (Auto Shutter)	Adjustable via Software
Gain:	Auto	
White Balance:	Auto	Auto (3,400 ~ 15,000° K)
Focal Length:	0.76 mm	1.66 mm
Aperture Ratio:	F 3.0	F 2.8
Angle of View:	Horizontal 44°, Vertical 63°	> 50°
Depth of Field:	10 ~ 50 mm	30 ~ 100 mm
Light Source:	White LED (2 pcs)	White LED (6 pcs)
Tip Diameter:	4.5 mm Ø	6 mm Ø
Probe Length:	1.5 m	
Minimum Bend Radius:	30 mm	
Tensile Strength:	30 N (3kgf)	
Input Voltage:	+ 5Vdc, 300 mA	+ 5Vdc USB Bus Power, 120 mA
AC Adaptor:	AC 100Vdc ~ 240Vdc, 50Hz / 60Hz, 0.3A	N/A
Battery:	Li-ION Battery (3.7Vdc, 2000mA) Estimated Battery Life: Up to 4 Hrs.	N/A
Operating Temperature:	0° ~ 40°C (23° ~ 104°F)	0° ~ 50°C (23° ~ 113°F)
Operating System:	N/A	Win XP SP2, SP3 / Vista (32 bit), SP1
Waterproof Tip:	Equivalent to IP67	
- *Hand piece*	Water Resistant	No waterproofing
Dimensions (Control Unit):	130 (H) x 70 (W) 30 (D) mm (5.11" x 2.75" x 1.18")	130 (L) x 40 Ø mm 5.11" (L) x 1.57" Ø
Weight:	300g (10.58oz)	310g (10.93oz)

Dependable Performance

SENTECH

Progressive Scan Camera Series

Sentech's line of Progressive Scan analog Machine Vision cameras is powerful and versatile. This line up starts with our Cube Cameras series. The case of these cameras is approximately a one inch cube. They feature VGA (0.3MP) to UXGA (2MP) resolutions with full machine vision functionality. Next in the line up are the "SS" series of remote head cameras. These are high speed VGA cameras with a very small remote head for applications where weight, space and inertia control are critical. Finally, Sentech offers a board version with a face dimension of 30 x 30mm featuring full MV functionality.

Key Features

- Analog Output
- 3 Models: Cube, Board and Remote Head
- High Speed Frame Rates *(15 ~ 90 fps)*
- RS232 Communication
- 2 Trigger Modes *(with Reset and Non-Reset)*
  - *Pulse Width*
  - *Edge Preset*
- Partial Scan *(1/2, 1/4, Variable)*
- Gamma = 0.45 or 1.0
- Square Pixels
- Compact Sizes

Progressive Scan Overview

Models	Sensor			Resolution				Rate				
	1/3"	1/2"	1/1.8"	VGA	XGA	SXGA	UXGA	15 fps	19 fps	30 fps	60 fps	90 fps
Cubed Models												
STC-A33A	●			●						●	●	●
STC-A83A	●				●					●		
STC-A152A		●				●		●	●			
STC-A202A			●				●	●				
Remote Head Models												
STC-SS1200	●			●							●	
STC-SS1200-90	●			●								●
Board Models												
STC-33	●			●						●	●	
STC-83	●				●					●		

Progressive Scan *Monochrome* Analog Camera Series

STC-A33A VGA, *0.3MP*
STC-A83A XGA, *0.8MP*
STC-A152A SXGA, *1.3MP*
STC-A202A UXGA, *2.0MP*

The Sentech Progressive Scan analog cube series cameras are very powerful, analog-out, progressive scan machine vision cameras. These cameras have a very small package of only 28(W) x 28(H) x 46.3(D) mm in size (including the C-Mount). This series features VGA ~ UXGA CCD sensors with scan rates of 15 ~ 90 fps, with full resolution. These cameras also feature full triggering functionality.

Features

- Monochrome
- 1/3", 1/1.8" and 1/2" CCD
- 15, 19, 30, 60 and 90fps *(Model Specific)*
- High Speed Triggering
- Square Pixels
- Analog Output
- Communication: RS232C
- Partial Scanning
- Size: 28 (W) x 28 (H) x 46.3 (D) mm

series | Accessories

Cables

12W-0.45
12W-02
12W-03
12W-05

Connectors

Hirose: HR10-10P-12S
Hirose: HR10-10R-12P

Lenses

Various C-Mount Lenses
Various Mega-Pixel Lenses
Various Telecentric Lenses

STC-SS1200 VGA, *0.3MP*
STC-SS1200-90 VGA, *0.3MP*

The STC-SS1200 series was designed for high speed applications where size and weight are extremely critical. The remote head design features a light, compact head so that a minimum amount of inertia is generated during very fast stop/start XYZ type movements. The STC-SS1200 series offers high speed triggering with *60* or *90* fps analog output, utilizing a VGA progressive scan format.

Features

- VGA (60 or 90 fps)
- Monochrome
- 1/3" CCD
- Analog Output
- High Speed Triggering
- Various Head Cable Entry Configurations
- Super Compact Head: 20(W) x 20(H) x 25(D) mm

STC-33 VGA, *0.3MP*
STC-83 XGA, *0.8MP*

The STC-33/83 series are full featured, low cost, VGA (STC-33), XGA (STC-83) progressive scan machine vision board camera with a 1/3" monochrome CCD. These cameras provide an analog output signal and feature high speed triggering capability. The STC-33 *(VGA)* provides 30 or 60 fps and the STC-83 *(XGA)* provides 30 fps.

Features

- VGA (30, 60 fps) & XGA (30 fps)
- Monochrome
- 1/3" CCD
- Analog Output
- High Speed Triggering
- Partial Scanning
- Square Pixels
- Size: 30(W) x 30(H) x 32(D) mm

Progressive Scan Models

Models	STC-A33A	STC-A83A	STC-A152A	STC-A202A
Type:	Cube			
Resolution:	VGA (0.3 MP)	XGA (0.8MP)	SXGA (1.3MP)	UXGA (2MP)
Image Sensor:	1/3" CCD (ICX424AL)	1/3" CCD (ICX204AL)	1/2" CCD (ICX205AL)	1/1.8" CCD (ICX274AL)
Signal Format:	Monochrome Progressive Analog			
Frame Rate:	30, 60, 90 fps	30 fps	15, 19 fps	15 fps
Active Picture Element:	648 (H) x 494 (V)	1024 (H) x 768 (V)	1360 (H) x 1040 (V)	1620 (H) x 1220 (V)
Chip Size (mm):	5.79 (H) x 4.89 (V)	5.80 (H) x 4.92 (V)	7.60 (H) x 6.20 (V)	8.50 (H) x 6.80 (V)
Cell Size (μm):	7.4 (H) x 7.4 (V)	4.65 (H) x 4.65 (V)		4.4 (H) x 4.4 (V)
Vertical Frequency:	31.47, 62.94, 94.784 Hz	29.59 Hz	15.28, 19.3 Hz	15.3164 Hz
Horizontal Frequency:	47.2028 kHz	23.23 kHz	20.57 kHz	19.176 kHz
Pixel Clock Frequency:	36.8181 MHz	29.5 MHz	36.8181 MHz	
Scanning Method:	Full Scan, Partial Full Scan, Partial Scan (1/2, 1/4, Variable), Binning, Binning Partial Scan (1/1, 1/2, 1/4, Variable)			
Sync System:	Internal / External (HD / VD)			
Communication:	RS232 via 12pin connector			
Trigger Mode:	Edge Preset: V Reset, Non-Reset Pulse Width Trigger: V Reset, Non-Reset			
Shutter Speed:	Dip Switch: OFF, 1/200, 1/500, 1/1,000, 1/2,000, 1/4,000, 1/8,000, 1/12,000 Communication: OFF, 1/2 to 1/100,000 (Variable at every H and Clock)			
Minimum Illumination:	0.14 Lux @ F1.2 50 IRE	0.17 Lux @ F1.2 50 IRE	0.16 Lux @ F1.2 50 IRE	0.07 Lux @ F1.2 50 IRE
Gain:	Manual (0 to 27 dB)			
S/N Ratio:	56dB (Gain 0dB)			
Gamma:	1.0 / 0.45			
Lens Mount:	C-Mount			
Video Output:	1Vp-p, 75Ω, DC Coupling (0V Clamp)			
Optical Filter:	No IR cut filter			
Optical Center Accuracy:	Position accuracy in H and V direction: +/- 0.31mm			
Shock and Vibration:	Vibration: 10G (20 to 200Hz) Shock: 70G (3 directions, 3 times each)			
Input Voltage:	12Vdc +/- 10%			
Power Consumption:	1.8W, 150mA		2.2 W , 183mA	3.0 W, 250mA
Operating Temperature:	-5° ~ 50°C (23° ~ 122°F)			
Storage Temperature:	-30° ~ 65°C (-22° ~ 149°F)			
Dimensions:	28 (W) x 28 (H) x 40 (D) mm (1.10" x 1.10" x 1.57")			
Weight:	43g (1.5 oz)			

Analog *Progressive Scan* Camera Comparison Chart

STC-SS1200	STC-SS1200-90	STC-33	STC-83
Remote Head Cube		Board	
VGA (0.3 MP)		VGA (0.3 MP)	XGA (0.8MP)
1/3" CCD (ICX424AL)			1/3" CCD (ICX204AL)
Monochrome Progressive Analog			
60 fps	90 fps	30, 60 fps	30 fps
648 (H) x 494 (V)			1024 (H) x 768 (V)
5.79(H) x 4.89(V)	5.80 (H) x 4.92 (V)	5.79(H) x 4.89(V)	5.80 (H) x 4.92 (V)
7.4 (H) x 7.4 (V)	4.65 (H) x 4.65 (V)	7.4 (H) x 7.4 (V)	4.65 (H) x 4.65 (V)
59.94 Hz	89.91 Hz	29.97, 59.94 Hz	29.18 Hz
31.4685 kHz	47.203 kHz	15.734, 31.468 kHz	23.228 kHz
24.5454 MHz	36.818 MHz	12.272, 24.545 MHz	14.75 MHz
Full Scan, Partial Full Scan, Partial Scan (1/2, 1/4), Binning, Binning Partial Scan (1/1, 1/2, 1/4)			
Internal / External (HD / VD)			
N/A			
Edge Preset: V Reset, Non-Reset, Sync Reset, Restart-Reset Pulse Width Trigger: V Reset, Non-Reset, Sync Reset, Restart-Reset		Edge Preset Trigger (10 Steps) Pulse Width Trigger	
1/60 ~ 1/20,000 (8 Steps)	1/90 ~ 1/10,000 (8 Steps)	1/30 ~ 1/16,000 (10 steps) 1/60 ~ 1/32,000 (10 steps)	1/30 ~ 1/16,000 (10 steps)
1.82 Lux @ F1.2 50 IRE	1.64 Lux @ F1.2 50 IRE	0.14 Lux @ F1.2 50 IRE	0.17 Lux @ F1.2 50 IRE
AGC/Manual (4 to 24 dB)			
52dB (Gain 0dB)		50dB (Gain 0dB)	
1.0 / 0.45		1.0	
Special Mount (Male 10.5 Female P0.5)		CS-Mount	
1Vp-p, 75Ω			
No IR cut filter			
Position accuracy in H and V direction: +/- 0.31mm		N/A	
Vibration: 10G (20 to 200Hz) Shock: 70G (3 directions, 3 times each)			
12Vdc +/- 10%			
2.64W, 220 mA		1.44W, 120 mA	1.56W, 130 mA
-10° ~ 45°C (14° ~ 113°F)			
-30° ~ 60°C (-22° ~ 140°F)			
CCD Head: 20 (W) x 20 (H) x 25 (D) mm (0.78" x 0.79" x 0.98") CCU: 110 (W) x 80 (H) x 28 (D) mm (4.33" x 3.14" x 1.10")		30 (W) x 30 (H) x 32 (D) mm (1.10" x 1.10" x 1.57")	
CCD Head: 80g (2.82 oz); CCU: 150g (5.33 oz)		27g (0.95 oz)	

Proven, Accurate Imaging

SENTECH

Analog Board and Cased

Camera Series

Sentech offers an extensive range of Analog cameras in both board, cased and OEM configurations. These cameras have been designed for a wide range of applications: microscopy, medical equipment, endoscopic equipment, otoscopes, spectrometers, physically abusive environments, hand held instrumentation, inter-oral cameras, bar code readers and even sophisticated machine vision systems. These cameras are feature rich, provide excellent images and proven dependable performance.

Analog Overview

Models	Sensor			CCD		Hor. TV Lines			
	1/4"	1/3"	1/2"	Color	B/W	330	380	480	570
Cased Color Models									
STC-N63/P63		●		●				●	
STC-600 Series	●	●	●	●				●	
Cased Monochrome Models									
STC-131 Series		●			●		●		
STC-160 Series		●			●				●
STC-170 Series		●	●		●				●
STC-E42A/C42A			●		●				●
STC-E43A/C43A		●			●				●
Board Color Models									
STC-600 Series	●	●	●	●				●	
STC-DN64/DP64	●			●				●	
STC-N54/P54	●			●		●			
STC-N63/P63		●		●				●	
STC-N64/P64	●			●		●			
STC-N632/P632		●		●				●	
Board Monochrome Models									
STC-E631/C631		●			●				●
STC-130 Series		●			●		●		
STC-160 Series		●			●				●
STC-170 Series		●			●				●
Remote Head Color Models									
STC-R640	●			●				●	
OEM Color Models									
STC-R640	●			●				●	
EGE-F Series	●	●	●	●				●	
EGE-W Series	●			●				●	
OEM Monochrome Models									
STC-R920M			●		●				●

Cased *Color* Analog Camera Series

NTSC & PAL

STC-N63/P63 Series

In a compact housing, the **STC-N63** *(NTSC)* and **STC-P63** *(PAL)* cameras employ a high resolution, high sensitivity, 1/3" color CCD that produces 480 TV lines of horizontal resolution. The STC-N63/P63 series is available in a cased version with five optional back panels *(BJ, BT, CJ, CC or CT)* or a board level configuration.

BJ Model
- Power Jack for Power In
- BNC Connector (Video Out)
- Auto Iris Lens Connection (DC Driven)
- Auto Iris Level Adjustment

BT Model
- Terminal Block (Spring Loaded) for Power In
- BNC Connector (Video Out)
- Auto Iris Lens Connection (DC Driven)
- Auto Iris Level Adjustment

CC Model
- 12 Pin Hirose Power, Video Out, Y/C Out, EXT HD/VD Sync
- BNC Connector (Video Out)
- Push-to-Set/Auto White Balance
- RS-232C Serial I/O for User DSP Programming

CJ Model
- Power Jack for Power In
- BNC Connector (Video Out)
- Y/C Connector (Y/C Video Out)
- Push-to-Set / Auto White Balance
- RS-232C Serial I/O for User DSP Programming

CT Model
- Terminal Block (Spring Loaded) for Power In
- BNC Connector (Video Out)
- Y/C Connector (Y/C Video Out)
- Push-to-Set/Auto White Balance
- RS-232C Serial I/O for User DSP Programming

STC-620/625 Series
STC-630/635 Series
STC-640/645 Series

The **STC-600** *(NTSC)* and **STC-605** *(PAL)* series offers 1/4", 1/3" and 1/2" CCDs with high resolution. These cameras feature a user programmable 10 bit DSP. The series is available in six optional back panels *(A, AS, BJ, BT, CC or CT)* or a board level configuration.

NTSC & PAL

A Model
- Power Jack
- RCA Connector (Video Out)
- Manual Controls: Color, Brightness, Sharpness, Gamma

AS Model
- 12 Pin Hirose: Power, Y/C Out
- BNC Connector (Video Out)
- Manual Controls: Color, Brightness, Sharpness, Gamma

BJ Model
- Power Jack
- BNC Connector (Video Out)
- DC Auto Iris Lens Connector

BT Model
- Power Terminal
- BNC Connector (Video Out)
- Auto Iris Level Control
- DC Auto Iris Lens Connector

CC Model
- 12 Pin Hirose: Power, Y/C Out, HD/VD In
- BNC Connector (Video Out)
- Y/C Connector (Y/C Out)
- RS-232 Mini Jack DSP Set Up Camera Control

CT Model
- Power Terminal
- BNC Connector (Video Out)
- Y/C Connector (Y/C Out)
- RS-232 Mini Jack DSP Set Up Camera Control
- DC Auto Iris Lens Connector
- Auto Iris Level Control

color | Specifications

Analog *Color Cased* Camera Comparison Chart

Analog Color Cased Models

NTSC *PAL*	STC-N63 *STC-P63*	STC-620 *STC-625*	STC-630 *STC-635*	STC-640 *STC-645*
Image Sensor:	1/3″ CCD (ICX638BKA) 1/3″ CCD *(ICX639BKA)*	1/2″ CCD (ICX418AKL) 1/2″ CCD *(ICX419AKL)*	1/3″ CCD (ICX408AK) 1/3″ CCD *(ICX409AK)*	1/4″ CCD (ICX228AK) 1/4″ CCD *(ICX229AK)*
Horizontal Resolution:	480 TV Lines	480 TV Lines		
Signal Format:	NTSC / *PAL*	NTSC / *PAL*		
Effective Picture Element:	748 (H) x 494 (V) / *752 (H) x 582 (V)*	768 (H) x 494 (V) / *752 (H) x 582 (V)*		
Horizontal Frequency:	15.734 kHz / *15.625 kHz*	15.734 kHz / *15.625 kHz*		
Vertical Frequency:	59.94 Hz / *50.00 Hz*	59.94 Hz / *50.00 Hz*		
Scanning System:	2:1 Interlace	2:1 Interlace		
Sync System:	Internal / External (Model Dependent)	Internal / External (Model Dependent)		
Serial Communication:	RS-232C Serial I/O Port (Select models)	RS-232C Serial I/O Port (Select models)		
Electronic Shutter:	1/60 Fixed (Programmable via DSP)	Standard: 1/60 *(1/50)* , 1/125 *(1/100)*, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10,000 Extended: 2, 4, 6, 8, 10, 12,14, 16 fields		
Electronic Iris:	1/60 *(1/50)* ~ 1/100,000	1/60 *(1/50)* ~ 1/10,000		
Auto Iris Lens Connector:	DC Type (Model Dependent)	N/A		
Minimum Illumination:	0.17 Lux @ F1.2, 20 IRE *0.14 Lux @ F1.2, 20 IRE* 0.53 Lux @ F1.2, 50 IRE *0.47 Lux @ F1.2, 50 IRE*	0.42 Lux @ F1.2, 20 IRE *0.24 Lux @ F1.2, 20 IRE* 1.13 Lux @ F1.2, 50 IRE *0.66 Lux @ F1.2, 50 IRE*	0.43 Lux @ F1.2, 20 IRE *0.26 Lux @ F1.2, 20 IRE* 1.54 Lux @ F1.2, 50 IRE *0.80 Lux @ F1.2, 50 IRE*	0.56 Lux @ F1.2, 20 IRE *0.70 Lux @ F1.2, 20 IRE* 1.93 Lux @ F1.2, 50 IRE *1.43 Lux @ F1.2, 50 IRE*
White Balance:	ATW / Manual / Push-to-Set (Model Dependent)	ATW / Manual / Push-to-Set (Model Dependent)		
DSP:	10 bit DSP (User Programmable)	10 bit DSP (User Programmable)		
Mirror Image:	Normal / Mirror (via DSP)	N/A		
S/N Ratio:	>48dB (AGC Off)	>45dB (AGC Off)		
Gain:	AGC / Fixed (via DSP)	AGC / Fixed (via DSP) 0 ~ 30dB		
Gamma:	0.45 (Adjustable via DSP)	0.45, 1.0 or Other values (Adjustable via DSP)		
Negative / Positive:	No	On/Off Selectable		
Backlight:	On/Off (DIP switch selectable)	Back Light compensation at electronic shutter		
Video Output:	Composite Video or Y/C (On select models)	Composite Video or Y/C (On select models)		
Lens Mount:	CS / C (w/ Adaptor)	CS / C (w/ Adaptor) Model Dependent		
Input Voltage:	12Vdc +/- 10%	12Vdc +/- 10%		
Power Consumption:	1.80W; 150mA	3.0W; 250mA		
Operating Temperature:	-10° ~ 45°C (14° ~ 113°F)	-10° ~ 45°C (14° ~ 113°F)		
Storage Temperature:	-30° ~ 60°C (-22° ~ 140°F)	-30° ~ 60°C (-22° ~ 140°F)		
Dimensions:	36 (W) x 36 (H) x 37.35 (D) mm (1.44″ x 1.44″ x 1.49″)	51 (W) x 51 (H) x 55.5 (D) mm (2.4″ x 2.4″ x 2.22″)		
Weight:	70g (2.46oz)	190g (6.70oz)		

Board *Color*
Analog Camera Series

NTSC & PAL

STC-N632/P632 Series

The **STC-N632** *(NTSC)* and **STC-P632** *(PAL)* were designed for providing good, reliable color video in rugged environments with high temperature and vibration levels.

Features

- 1/3" Color CCD
- Designed For Rugged Environments
- 480 TV Lines
- Programmable DSP
- Micro Lens Lock Mount
- Size: 26 (H) x 26 (W) x Var. (D) mm

STC-620/625 Series
STC-630/635 Series
STC-640/645 Series

Sentech's most powerful cased series is also available in board level. The **STC-600** *(NTSC)* and **STC-605** *(PAL)* series offers a 1/4", 1/3" and 1/2" CCD with high resolution. These cameras feature an user programmable 10 bit DSP.

Features

- 1/4", 1/3" and 1/2" CCD Color
- 480 TV Lines
- Gamma: 0.45, 1.0 or Other values via DSP
- Gain: Manual / AGC (0 - 30dB)
- 10-Bit DSP, 3rd Generation *(User Accessible)*
- Negative / Positive Image
- Internal / External Sync *(Model Dependent)*
- Y/C *(Model Dependent)*
- 7 Lens Options Including CS Mount
- Size: 45 (W) x 45 (H) x Var. (D) mm

NTSC & PAL

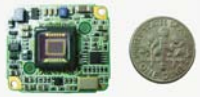
STC-N63/P63 Series

The **STC-N63** *(NTSC)* and **STC-P63** *(PAL)* offers a high-resolution, high sensitivity, 1/3" color CCD in a very compact board configuration. These low cost cameras offer user programmable DSP and setup.

Features

- 1/3" Color CCD
- 480 TV Lines
- 10-Bit Digital Signal Processing
- White Balance *(Auto, Manual or Push-to-Set)*
- 7 Lens Options Available
- Size: 32 (W) x 32 (H) x Var. (D) mm

NTSC & PAL

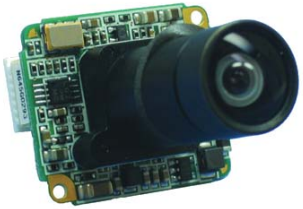


STC-N54/P54 Series
STC-N64/P64 Series

The **STC-N54** *(NTSC)* / **STC-P54** *(PAL)* Low Res and the **STC-N64** *(NTSC)* / **STC-P64** *(PAL)* High Res are 1/4" CCD, high performance, color board cameras. They are targeted for low cost, high performance color applications where size is critical.

Features

- 1/4" CCD Color
- 330 TV Lines / 480 TV Lines
- 10-Bit DSP *(User Programmable)*
- Field Integration
- 5 Lens Options Including CS Mount
- Size: 26 (W) x 22 (H) x Var. (D) mm



NTSC & PAL

STC-DN64/DP64 Series

The **STC-DN64** *(NTSC)* and **STC-DP64** *(PAL)* are extremely small, color cameras with the CCD located on a flexible ribbon. It was designed to fit into instruments the size of a ball point pen.

Features

- 1/4" CCD Monochrome
- 480 TV Lines
- Programmable DSP
- Field Integration
- CCU Board: 48.5 (W) x 10 (H) mm
  CCD Head: 13.8 (W) x 10 (H) mm

NTSC & PAL

color | Specifications

Analog *Color Board* Camera Comparison Chart

Analog Color Board Models

NTSC / *PAL*	STC-N632 / *STC-P632*	STC-N63 / *STC-P63*	STC-DN64 / *STC-DP64*	STC-N54 / *STC-P54*	STC-N64 / *STC-P64*	STC-620 / *STC-625*	STC-630 / *STC-635*	STC-640 / *STC-645*
Image Sensor:	1/3″ CCD (ICX638BKA) 1/3″ CCD *(ICX639BKA)*	1/3″ CCD (ICX638BKA) 1/3″ CCD *(ICX639BKA)*	1/4″ CCD (ICX228AK) 1/4″ CCD *(ICX229AK)*	1/4″ CCD (RJ2411AB0PB) 1/4″ CCD *(RJ2421AB0PB)*	1/4″ CCD (RJ2451AA0PB) 1/4″ CCD *(RJ2461AA1PB)*	1/2″ CCD (ICX418AKL) 1/2″ CCD *(ICX419AKL)*	1/3″ CCD (ICX408AK) 1/3″ CCD *(ICX409AK)*	1/4″ CCD (ICX228AK) 1/4″ CCD *(ICX229AK)*
Horizontal Resolution:	480 TV Lines			330 TV Lines	480 TV Lines			
Signal Format:	NTSC / *PAL*			NTSC / *PAL*				
Effective Picture Element:	748 (H) x 494 (V) *752 (H) x 582 (V)*			512 (H) x 492 (V) *512 (H) x 582 (V)*	768 (H) x 494 (V) *752 (H) x 582 (V)*			
Scanning System:	2:1 Interlace			2:1 Interlace				
Sync System:	Internal	Internal / External (Model Dependent)	Internal	Internal		Internal / External (Model Dependent)		
Serial Communication:	Programmable DSP via I^2C	RS-232C Serial I/O Port (Select models)	Programmable DSP via I^2C	Programmable DSP via I^2C		RS-232C Serial I/O Port (Select models)		
Electronic Shutter:	Programmable via DSP			Programmable via Serial Communication				
Electronic Iris:	1/60 *(1/50)* ~ 1/100,000			1/60 ~ 1/100,000 / *1/50 ~ 1/100,000*		1/60 ~ 1/10,000 / *1/50 ~ 1/10,000*		
Auto Iris Lens Connector:	N/A	DC Type (Model Dependent)	N/A	N/A				
Minimum Illumination:	0.17 Lux @ F1.2, 20 IRE *0.14 Lux @ F1.2, 20 IRE* 0.53 Lux @ F1.2, 50 IRE *0.47 Lux @ F1.2, 50 IRE*		0.52 Lux @ F1.2, 20 IRE *0.24 Lux @ F1.2, 20 IRE* 1.81 Lux @ F1.2, 50 IRE *0.71 Lux @ F1.2, 50 IRE*	0.5 Lux @ F1.2, 20 IRE *0.3 Lux @ F1.2, 20 IRE* 1.68 Lux @ F1.2, 50 IRE *0.94 Lux @ F1.2, 50 IRE*	0.52 Lux @ F1.2, 20 IRE *0.24 Lux @ F1.2, 20 IRE* 1.81 Lux @ F1.2, 50 IRE *0.71Lux @ F1.2, 50 IRE*	0.42 Lux @ F1.2, 20 IRE *0.24 Lux @ F1.2, 20 IRE* 1.13 Lux @ F1.2, 50 IRE *0.66 Lux @ F1.2, 50 IRE*	0.43 Lux @ F1.2, 20 IRE *0.26 Lux @ F1.2, 20 IRE* 1.54 Lux @ F1.2, 50 IRE *0.80 Lux @ F1.2, 50 IRE*	0.56 Lux @ F1.2, 20 IRE *0.70 Lux @ F1.2, 20 IRE* 1.93 Lux @ F1.2, 50 IRE *1.43 Lux @ F1.2, 50 IRE*
White Balance:	ATW / Manual (via DSP)	ATW / Manual / Push-to-Set (via DSP)	ATW / Manual (via DSP)	ATW / Manual (via DSP)		ATW / Manual / Push-to-Set (via DSP)		
DSP:	*Fully User Programmable with Sentech Software*			*Fully User Programmable with Sentech Software*				
Mirror Image:	Normal / Mirror (via DSP and Hardware Switch)	Normal / Mirror (via DSP)		Normal / Mirror (via DSP)		N/A		
S/N Ratio:	>48dB (AGC Off)			>48dB (AGC Off)		>45dB (AGC Off)		
Gain:	AGC / Fixed (via DSP)			AGC / Fixed (via DSP)		AGC / Fixed (via DSP) 0 ~ 30dB		
Gamma:	Programmable via DSP			Programmable via DSP				
Video Output:	Composite Video 1.0Vp-p, 75Ω	Composite Video or Y/C (On select models)	Composite Video 1.0Vp-p, 75Ω	Composite Video 1.0Vp-p, 75Ω		Composite Video or Y/C (On select models)		
Negative / Positive:	N/A	N/A	N/A	N/A		On/Off Selectable		
Backlight:	N/A	On/Off (DIP switch selectable)	N/A	N/A		Back Light compensation at electronic shutter		
Lens Mount:	Micro Lens Mount w/ Locking Mechanism	CS / Micro Lens Mount	N/A	CS / Micro Lens Mount		C / CS / Micro Lens Mount		
Input Voltage:	7Vdc ~ 13Vdc	12Vdc	4.8Vdc ~ 11Vdc	5Vdc ~ 12Vdc		12Vdc		
Power Consumption:	1.0W; 83mA at 12Vdc	1.80W; 150mA	0.65W; 130mA at 5Vdc	0.6W; 120mA at 5Vdc ~ 50mA at 12Vdc		3.0W; 250mA		
Operating Temperature:	-10° ~ 50°C (14° ~ 122°F)	-10° ~ 45°C (14° ~ 113°F)		-10° ~ 45°C (14° ~ 113°F)				
Storage Temperature:	-30 ~ 65°C (-22° ~ 149°F)	-30° ~ 60°C (-22° ~ 140°F)		-30° ~ 60°C (-22° ~ 140°F)				
Dimensions (mm):	26 (W) x 26 (H) x Var. (D) (1.04″ x 1.04″ x Var.)	32 (W) x 32 (H) x Var. (D) (1.28″ x 1.28″ x Var.)	Board: 48.5 (W) x 10 (H) Head: 11.8 (W) x 10 (H)	26 (W) x 22 (H) x Var. (D) (1.04″ x 0.88″ x Var.)		51 (W) x 51 (H) x 55.5 (D) (2.4″ x 2.4″ x Var.)		
Weight:	12g (0.42oz)	10g (0.35 oz)	3g (0.105 oz)	6g (0.21 oz)		190g (6.70oz)		

Cased *Monochrome* Analog Camera Series

EIA & CCIR

STC-E42A/C42A Series
STC-E43A/C43A Series

The **STC-E42A**/**STC-C42A** *(1/2")* and **STC-E43A**/**STC-C43A** *(1/3")* series are analog cube cameras designed for machine vision. These are available with a 1/2" or 1/3" CCD in either EIA or CCIR formats. They feature field/frame integration, internal or external sync and RS232 communication. The small configuration allows them to be utilized in very tight spaces.

Features

- 1/2" or 1/3" CCD
- Available in EIA & CCIR Formats
- 570 (EIA) and 560 (CCIR) TV Lines
- Field / Frame Integration
- Internal / External Sync
- Gamma: 0.45 or 1.0
- C-Mount
- Dimensions: 28(W) x 28(H) x 46.3(D) mm
- 12Vdc Power

EIA & CCIR

Note: DC Auto Iris Lens Control is Disabled

STC-131/136 Series

The **STC-131** *(EIA)* and **STC-136** *(CCIR)* is an inexpensive, compact, cased camera series. This camera has auto gain control and is available with an EXview CCD. These cameras come with a CS-Mount (C-Mount with an adapter) and a composite video output.

STC-131BJ

STC-131BT

Features

- 1/3" CCD
- Available in EIA & CCIR Formats
- 380 TV Lines Horizontal Resolution
- AGC: On (0-20dB)
- Minimum Illumination: 0.18 Lux @ F1.2, 50 IRE
- CS Mount (C-Mount with adapter)
- Size: 40 (W) x 40 (H) x 45 (D) mm

STC-160/165 Series

EIA & CCIR

The **STC-160** *(EIA)* and **STC-165** *(CCIR)* cased series is a low-cost, high resolution machine vision camera, which offers users a high-resolution 1/3" CCD, fixed shutter speeds from 1/60 (1/50) ~ 1/100,000 per second, external sync (HD/VD), and much more.

Features

- 1/3" CCD Monochrome
- Available in EIA & CCIR Formats
- 570 TV Lines Horizontal Resolution
- Gamma: 0.45 or 1.0 Switchable
- Sync: Int. or Ext. (HD/VD) *(BC Model Only)*
- Field Integration
- Electronic Iris
- Electronic Shutter
- CS-Mount (C-Mount with adapter)
- Size: 51(W) x 51(H) x 55.5(D) mm

STC-160BC

STC-160BT

STC-170/STC-175 Series
STC-172/STC-177 Series

EIA & CCIR

The **STC-170** *(EIA)* / **STC-175** *(CCIR)* and the **STC-172** *(EIA)* / **STC-177** *(CCIR)* are a very low cost series of cased machine vision cameras. These cameras feature a 1/3" or 1/2" CCD, offers integration HOLD for low light applications, field/frame integration, internal/external sync and an interlace/non-interlace output.

Features

- 1/3" or 1/2" CCD Monochrome
- Available in EIA & CCIR Formats
- 570 TV Lines Horizontal Resolution
- Field / Frame Integration
- Integration Hold Feature
- External Sync *(170/175 BC Model)*
- Interlace / Non-Interlace
- CS-Mount (C-Mount with adapter)
- Size: 51(W) x 51(H) x 55.5(D) mm

STC-170BC

STC-170BT

Analog *Monochrome Cased* Camera Comparison Chart

Analog Monochrome Cased Models

EIA / CCIR	STC-E42 / STC-C42	STC-E43 / STC-C43
Image Sensor:	1/2″ CCD (ICX418AL) 1/2″ CCD *(ICX419AL)*	1/3″ CCD (ICX408AL) 1/3″ CCD *(ICX409AL)*
Horizontal Resolution:	570 TV Lines / *560 TV Lines*	
Vertical Resolution:	Field: 350 TV Lines / *410 TV Lines* Frame: 485 TV Lines / *575 TV Lines*	
Signal Format:	EIA / *CCIR*	
Frame Rate:	30fps	
Effective Picture Element:	795 (H) x 595 (V) *752 (H) x 582 (V)*	
Chip Size (mm):	7.40 (H) x 5.95 (V)	5.59 (H) x 4.68 (V)
Cell Size (µm):	8.4 (H) x 9.8 (V) *8.6 (H) x 8.3 (V)*	6.3 (H) x 7.4 (V) *6.5 (H) x 6.25 (V)*
Horizontal Frequency:	15.734 kHz / *15.625 kHz*	
Vertical Frequency:	59.94 Hz / *50.00 Hz*	
Integration Mode:	Field / Frame	
Scanning System:	2:1 Interlace	
Sync System:	Internal / External (Auto Switching)	
Communication:	RS232 via 12 pin connector	
Electronic Shutter:	Dip Switch: 1/60 *(50)*, 1/100 *(120)*, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/8000, 1/10,000 RS232: 1/60 *(50)* ~ 1/100,000 (Variable at every H and clock)	
Electronic Iris:	N/A	
Minimum Illumination:	0.11 Lux @ F1.2, 50 IRE *0.07 Lux @ F1.2, 50 IRE*	0.13 Lux @ F1.2, 50 IRE *0.10 Lux @ F1.2, 50 IRE*
Gain:	Manual: 0 ~ 27dB	
S/N Ratio:	56dB (Gain 0dB)	
Gamma:	0.45 / 1.0	
Integration Hold:	N/A	
Video Output:	1.0Vp-p, 75Ω, DC Coupling	
Lens Mount:	C-Mount	
Optical Filter:	No IR cut filter	
Optical Center Accuracy:	Position accuracy in H and V directions: ± 0.31mm Rotational accuracy of H and V: ± 2.1 deg.	
Input Voltage:	12Vdc ± 10%	
Power Consumption:	< 1.8W; 150mA	
Operating Temperature:	-5° ~ 50°C (14° ~ 113°F)	
Storage Temperature:	-30° ~ 65°C (-22° ~ 149°F)	
Dimensions:	28 (W) x 28 (H) x 46.3 (D) mm (1.1″ x 1.1″ x 1.82″)	
Weight:	52g (2.08oz)	

STC-131 / STC-136	STC-160 / STC-165	STC-170 / STC-175	STC-172 / STC-177
1/3″ CCD (ICX404AL) 1/3″ CCD *(ICX405AL)*	1/3″ CCD (ICX408AL) 1/3″ CCD *(ICX409AL)*	1/3″ CCD (ICX408AL) 1/3″ CCD *(ICX409AL)*	1/2″ CCD (ICX418ALL) 1/2″ CCD *(ICX419ALL)*
380 TV Lines	570 TV Lines / *560 TV Lines*		
380 TV Lines / *420 TV Lines*	350 TV Lines / *410 TV Lines*	Field: 350 TV Lines / *410 TV Lines* Frame: 485 TV Lines / *575 TV Lines*	
EIA / *CCIR*			
30fps			
510 (H) x 492 (V) *500 (H) x 582 (V)*	768 (H) x 494 (V) *752 (H) x 582 (V)*		
N/A	5.59 (H) x 4.68 (V)		7.40 (H) x 5.95 (V)
N/A	6.35 (H) x 7.4 (V) *6.5 (H) x 6.25 (V)*		8.4 (H) x 9.8 (V) *8.6 (H) x 8.3 (V)*
15.734 kHz / *15.625 kHz*			
59.94 Hz / *50.00 Hz*			
Field		Field / Frame Switchable	
2:1 Interlace		2:1 Interlace / Non-Interlace (w/ external sync)	
Internal	Internal / External (HD/VD), Auto Switching by HD Input		
N/A			
1/60 *(1/50)*	1/60 *(50)*, 1/100 *(120)*, 1/250 ~ 1/10,000 (8 steps)	1/30, 1/60 *(50)*, 1/100 *(120)*, 1/250 ~ 1/10,000 (8 steps)	1/60 *(50)*, 1/100 *(120)*, 1/250 ~ 1/10,000 (8 steps)
1/60 *(1/50)* ~ 1/100,000		N/A	
0.18 Lux @ F1.2, 50 IRE *0.20 Lux @ F1.2, 50 IRE*	0.44 Lux @ F1.2, 50 IRE *0.44 Lux @ F1.2, 50 IRE*	0.04 Lux @ F1.2, 50 IRE *0.04 Lux @ F1.2, 50 IRE*	0.04 Lux @ F1.2, 50 IRE *0.04 Lux @ F1.2, 50 IRE*
AGC (0 ~ 20dB)	AGC / Manual (0 ~ 20dB)	AGC / Fixed, Manual (POT Adjustable)	
>48dB (AGC Off)	>56dB (AGC Off)		
0.6	0.45 / 1.0		
N/A		Yes, via Start/Stop TTL Signal, Vertical Reset	
1.0Vp-p, 75Ω			
C / CS Mount (w/ adapter)			C-Mount
N/A			
N/A			
12Vdc ± 10%			
< 1.2W; 100mA	< 1.68W; 140mA	< 1.32W, 110mA ± 20%	
-10° ~ 45°C (14° ~ 113°F)			
-30° ~ 60°C (-22° ~ 140°F)			
40 (W) x 40 (H) x 45 (D) mm (1.57″ x 1.57″ x 1.77″)	51 (W) x 51 (H) x 55.5 (D) mm (2.0″ x 2.0″ x 2.18″)		
100g (3.53oz)	180g (6.35oz)		

Board *Monochrome* Analog Camera Series

STC-E631/C631 Series

The **STC-E631** *(EIA)* and the **STC-C631** *(CCIR)* cameras have a 1/3" CCD. They are small, inexpensive monochrome cameras especially designed for rugged environments.

Features

- Designed For Rugged Environment
- 570 TV Lines
- Programmable DSP
- Field Integration
- CS & C-Mount (w/adapter) or Micro Lens Mount
- Size: 26 (W) x 26 (H) mm

EIA & CCIR

Low Light
EIA & CCIR

STC-130/135 Series

The **STC-130** *(EIA)* and **STC-135** *(CCIR)* is an inexpensive, compact camera series that has a 1/3" CCD. These cameras can adapt to almost any standard resolution industrial application. It's available in board or cased versions and is excellent for low light applications.

Features

- 1/3" IT CCD Monochrome
  STC-130 (EIA): 510 (H) x 492 (V)
  STC-135 (CCIR): 500(H) x 582 (V)
- 380 TV Lines Horizontal Resolution
- AGC: On (0-20dB)
- Field Integration
- CS and C-Mount (w/adapter) or Micro Lens
- Size: 35 (W) x 35 (H) x Var. (D) mm

EIA & CCIR

STC-160/165 Series

The **STC-160** *(EIA)* and **STC-165** *(CCIR)* are single board, high-resolution analog machine vision cameras, with a 1/3" CCD. They are small in size and offer many features and functions not found on most board-level cameras. Like most Sentech cameras, this series comes in a board-level or a cased version.

Features

- Gamma: 0.45 or 1.0 Switchable
- 570 TV Lines (EIA) or 560 TV Lines (CCIR)
- >48dB S/N Ratio (AGC Off)
- Field Integration
- Interlace / Non-Interlace
- Internal / External Sync
- CS Mount or Micro Lens Mount
- Dimensions: 45 (W) x 45 (H) x Var. (D) mm

EIA & CCIR

STC-170/175 Series
STC-172/177 Series

The **STC-170** *(EIA)* / **STC-175** *(CCIR)* has a 1/3" CCD and the **STC-172** *(EIA)* / **STC-177** *(CCIR)* has a 1/2" CCD. This low cost machine vision camera series offers an integration HOLD feature for low light applications, field/frame integration, Internal/External sync and an Interlace/Non-Interlace output.

Features

- 1/3" and 1/2" CCD
- Internal / External Sync. (HD/VD)
- 570 TV Lines (EIA) or 560 TV Lines (CCIR)
- Field / Frame Integration
- Integration Hold
- Interlace / Non-Interlace
- CS Mount or Micro Lens Mount

STC-R170
The STC-R170 has the same features as the STC-170 with a remote CCD

Analog *Monochrome Board* Camera Comparison Chart

Analog Monochrome Board Models

EIA / *CCIR*	STC-E631 / *STC-C631*	STC-130 / *STC-135*	STC-160 / *STC-165*	STC-170 / *STC-175*	STC-172 / *STC-177*
Image Sensor:	1/3″ CCD (ICX408AL) 1/3″ CCD *(ICX409AL)*	1/3″ CCD (ICX404AL) 1/3″ CCD *(ICX405AL)*	1/3″ CCD (ICX408AL) 1/3″ CCD *(ICX409AL)*	1/3″ CCD (ICX408AL) 1/3″ CCD *(ICX409AL)*	1/2″ CCD (ICX418ALL) 1/2″ CCD *(ICX419ALL)*
Horizontal Resolution:	570 TV Lines	380 TV Lines	570 TV Lines / *560 TV Lines*		
Vertical Resolution:	350 TV Lines / *410 TV Lines*	380 TV Lines / *420 TV Lines*	350 TV Lines / *410 TV Lines*	Field: 350 TV Lines / *410 TV Lines* Frame: 485 TV Lines / *575 TV Lines*	
Signal Format:	EIA / *CCIR*		EIA / *CCIR*		
Effective Picture Element:	748 (H) x 494 (V) *752 (H) x 582 (V)*	510 (H) x 492 (V) *500 (H) x 582 (V)*	768 (H) x 494 (V) *752 (H) x 582 (V)*		
Horizontal Frequency:	15.734 kHz / *15.625 kHz*		15.734 kHz / *15.625 kHz*		
Vertical Frequency:	59.94 Hz / *50.00 Hz*		59.94 Hz / *50.00 Hz*		
Integration Mode:	Field		Field	Field / Frame Switchable	
Scanning System:	2:1 Interlace		2:1 Interlace		
Sync System:	Internal		Internal	Internal / External Internal / External (HD/VD), Auto Switching by HD Input	
Communication:	Programmable DSP via I^2C	N/A	N/A		
Electronic Shutter:	Standard: 1/60 *(50)*, 1/100 *(120)*, 1/250 ~ 1/100,000 Extended: 1/7.5, 1/15, 1/30 *(1/6.25, 1/12.5, 1/25)*	1/60 *(1/50)*	1/60 *(50)*, 1/100 *(120)*, 1/250 ~ 1/10,000 (8 steps)	1/30, 1/60 *(50)*, 1/100 *(120)*, 1/250 ~ 1/10,000 (8 steps)	1/60 *(50)*, 1/100 *(120)*, 1/250 ~ 1/10,000 (8 steps)
Electronic Iris:	1/60 *(1/50)* ~ 1/100,000		1/60 *(1/50)* ~ 1/100,000	N/A	
Minimum Illumination:	0.19 Lux @ F1.2, 20 IRE *0.19 Lux @ F1.2, 20 IRE* 0.60 Lux @ F1.2, 50 IRE *0.56 Lux @ F1.2, 50 IRE*	0.06 Lux @ F1.2, 20 IRE *0.06 Lux @ F1.2, 20 IRE* 0.18 Lux @ F1.2, 50 IRE *0.20 Lux @ F1.2, 50 IRE*	0.18 Lux @ F1.2, 20 IRE *0.17 Lux @ F1.2, 20 IRE* 0.44 Lux @ F1.2, 50 IRE *0.44 Lux @ F1.2, 50 IRE*	0.01 Lux @ F1.2, 20 IRE *0.01 Lux @ F1.2, 20 IRE* 0.04 Lux @ F1.2, 50 IRE *0.04 Lux @ F1.2, 50 IRE*	
Mirror Image:	Normal / Mirror *(via DSP and Hardware Switch)*	N/A	N/A		
Gain:	AGC / Manual (Software Selectable)	AGC (0 ~ 20dB)	AGC / Manual (0 ~ 20dB)	AGC / Fixed, Manual (POT Adjustable)	
S/N Ratio:	>56dB (Gain 0dB)	>48dB (AGC Off)	>56dB (AGC Off)		
Gamma:	Programmable via DSP	0.6	0.45 / 1.0		
Integration Hold:	N/A		N/A	Yes, via Start/Stop TTL Signal, Vertical Reset	
Video Output:	1.0Vp-p, 75Ω		1.0Vp-p, 75Ω		
Lens Mount:	CS / C (w/ adapter) / Micro Lens Mount		CS / C (w/ adapter) / Micro Lens Mount		C-Mount
Optical Filter:	No IR cut filter	N/A	N/A		
Input Voltage:	7Vdc ~ +13Vdc	12Vdc ± 10%	12Vdc ± 10%		
Power Consumption:	< 1.0W, 83mA at 12Vdc	< 1.2W, 100mA	< 1.68W; 140mA	< 1.32W, 110mA ± 20%	
Operating Temperature:	-10° ~ 45°C (14° ~ 113°F)		-10° ~ 45°C (14° ~ 113°F)		
Storage Temperature:	-30° ~ 65°C (-22° ~ 149°F)	-30° ~ 60°C (-22° ~ 140°F)	-30° ~ 60°C (-22° ~ 140°F)		
Dimensions:	26 (W) x 26 (H) x Var. (D) mm (1″ x 1″ x Var.)	35 (W) x 35 (H) x Var. (D) mm (1.37″ x 1.37″ x Var.)	45 (W) x 45 (H) x Var. (D) mm (1.77″ x 1.77″ x Var.)		
Weight:	12g (0.42oz)	15g (0.53oz)	20g (0.71oz)	45g (1.58oz)	

Remote Head Color Cameras

NTSC & PAL

These cameras offer a remote head, micro-packaged 1/4", color CCD in a variety of cable lengths and head orientations. Best of all, Sentech's remote head cameras are only a fraction of what conventional remote head cameras cost.

Straight Head

STC-R640HD

Top of Scene

"Right Angle" Heads

STC-R640LHD

Top of Scene

STC-R640UHD

R640AS

- Analog Control Knobs for DSP Control
  - Gain, Color, Sharpness and Gamma
- BNC for Video Out
- 12 Pin Hirose *(Power & Y/C Out)*

R640CC

- Push-to-Set White Balance Switch
- RS232 Serial I/O for DSP Programming
- BNC for Video Out & Y/C Connector for Y/C Out
- 12 Pin Hirose *(Power In, Y/C Out & HD/VD In)*

R640CT

- Terminal Strip Power
- Push-to-Set White Balance Switch
- RS232 Serial I/O for DSP Programming
- BNC for Video Out & Y/C Connector for Y/C Out
- BNC for VS Sync

STC-R640AS

STC-R640CC

STC-R640CT

remote head | Specifications

Models	STC-R640	STC-R645
Image Sensor:	1/4" CCD (ICX228AK)	1/4" CCD (ICX229AK)
Horizontal Resolution:	480 TV Lines	
Signal Format:	NTSC	PAL
Scanning Method:	2:1 Interlace	
Frame Rate:	30 fps	
Effective Picture Element:	768 (H) x 494 (V)	752 (H) x 582 (V)
Horizontal Frequency:	15.734 kHz	15.625 kHz
Vertical Frequency:	59.94 Hz	50.00 Hz
Gain:	AGC / Manual	
S/N Ratio:	> 48dB (AGC:Off)	
Gamma:	0.45 (default), DSP Adjustable (32 steps)	
Sync:	Internal/External VS (CT model) / HD/VD (CC model)	
Minimum Illumination:	1.99 Lux @ F1.2, 50 IRE	2.15 Lux @ F1.2, 50 IRE
White Balance:	Manual / Full Auto / Push-to-Set (CC and CT models only)	
Serial I/O:	RS-232C Controllable (for DSP)	
Electronic Shutter:	1/60 (1/50) ~ 1/10,000 (8 steps)	
Electronic Iris:	1/60 (1/50) ~ 1/10,000	
DSP:	10-Bit, User Programmable	
Video Output:	Composite and Y/C (available on select models)	
Video Output Level:	1.0Vp-p 75 Ω	
Y/C Output Level:	0.7Vp-p 75 Ω	
Lens Mount:	Micro and C-Mount (w/ adapter)	
Input Voltage:	+ 12Vdc ± 10%	
Power Consumption:	2.64W; 220mA	
Operating Temperature:	-10° ~ 45°C (14° ~ 113°F)	
Dimensions: - *Cased Camera CCU* - *Straight Finished Head*	51 (W) x 51 (H) x 55.5 (D) mm (2.04" x 2.04" x 2.22") 10mm Ø (0.39" Ø)	
Weight:	Cased Camera CCU: 190g (6.7 oz)	

remote head | Accessories

Cables

CAB-3BNC
CAB-6BNC
CAB-6Y/C
12W-3.6PS

Power Supplies

45-601
45-752
45-752A
PWR-PSISP-6
PWR-PSISP-6YC6

Lens Mount

LEN-R640-CL

Programming Jig

Jig-ColorUSB
Jig-630

Lenses

Model No.	Focal Length
LEN-R640-L2.7	2.7mm
LEN-R640-L4	4mm
LEN-R640-L8	8mm
LEN-R640-L16	16mm
LEN-R640-L1611	16mm
LEN-R640-L2511	25mm

NTSC & PAL

STC-R640 Module *(without cable)*

The *STC-R640* is the foundation for the STC-R640 camera series. The camera control unit (CCU) is a compact 45 (W) x 45 (H) x 14 (D) mm; whereas, the CCD board is 22 (L) x 8 Ø mm. The STC-R640 is offered without a mating head cable between the CCU and CCD board.

STC-R640C Module

The *STC-R640C* is the same as the *STC-R640* except it is offered with a cable between the CCU and CCD board. The cable length can be 2, 3, 5, or 10 meters and there are a variety of head configurations available.

STC-R640MC & STC-R640HD2

The *STC-R640MC* combined with the *STC-R640HD2* have the same features as the R640C except that it has a Hirose connector that can be used for OEM applications that require the disconnection of the camera head.

EIA & CCIR

STC-R920 Series

The *STC-R920M* is a board level, monochrome DSP camera specifically developed for silicon wafer inspection. This camera features a 10 bit DSP which is programmable for your application by Sentech. The STC-R920M is a single compact board, slightly larger than a credit card, with a remote head CCD. The CCD board *(25 (W) x 20 (H) mm)* and the CCU board are separated by a wire harness available in lengths of 67mm or 120mm.

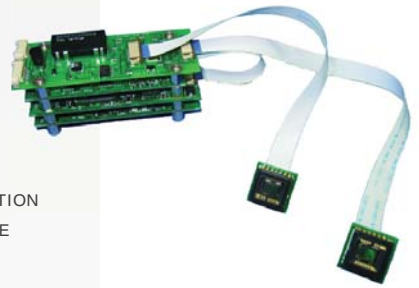
Features

- 1/2" Monochrome CCD Format
- 2:1 Interlace
- 570 TV Lines
- DSP Programmable
- Mirror Imaging
- Field or Frame Accumulation
- EIA or CCIR Formats
- Cable Length:
  - STC-R920/925M (67mm Head Cable)
  - STC-R920/925MB (120mm Head Cable)

EGE-F Series

The *EGE-F* Series is based on high-resolution 1/4", 1/3" and 1/2" CCDs. With a flexible printed circuit (FPC) cable connecting the main camera boards and the CCD board, the EGE-F offers very flexible integration to almost any application. Sentech also offers a two-headed version of this camera for very special applications.

NTSC & PAL



Features

- 1/4", 1/3" & 1/2" Color IT CCDs
- NTSC & PAL Formats
- Programmable 10bit DSP
- 480 TV Lines
- Extended Integration
- 2 bit Status Output
- Available in a two-headed CCD configuration
- Auto, Manual, Push-to-Set White Balance
- 6Vdc - 8Vdc Power
- Compact Size:
  CCU: 26 (W) x 19 (H) x 60 (D) mm
  HEAD: 12 (W) x 12 (H) x Var. (D) mm

EGE-W Series

The *EGE-W* Series utilizes a 1/4" high resolution, micro-package CCD. The CCD is connected to the processing boards with a wire harness. This provides better reliability in applications requiring frequent flexing or repositioning of the CCD head.

NTSC & PAL

Features

- 1/4" Color CCD Format
- NTSC & PAL Formats
- Programmable 10bit DSP
- 480 TV Lines
- Extended Integration
- 2 bit Status Output
- Auto, Manual, Push-to-Set White Balance
- 6Vdc - 8Vdc Power
- Compact Size
  CCU: 26 (W) x 19 (H) x 60 (D) mm
  CCD: 8 mm Ø

monochrome | Specifications

Analog *OEM* Camera Comparison Chart

Analog OEM Models

EIA / NTSC *CCIR / PAL*	STC-R920M *STC-R925M*	STC-R640 *STC-R645*	EGE-F22N *EGE-F22P*	EGE-F32N *EGE-F32P*	EGE-F42N *EGE-F42P*	EGE-W45N *EGE-W45P*
Image Sensor:	1/2″ CCD (ICX418ALL) 1/2″ CCD *(ICX419ALL)*	1/4″ CCD (ICX228AK) 1/4″ CCD *(ICX229AK)*	1/2″ CCD (ICX418AKL) 1/2″ CCD *(ICX419AKL)*	1/3″ CCD (ICX408AK) 1/3″ CCD *(ICX409AK)*	1/4″ CCD (ICX228AK) 1/4″ CCD *(ICX229AK)*	
	Monochrome	Color	Color			
Signal Formats:	EIA / *CCIR*	NTSC / *PAL*	NTSC / *PAL*			
Effective Picture Elements:	768 (H) x 494 (V) / *752 (H) x 582 (V)*		768 (H) x 494 (V) / *752 (H) x 582 (V)*			
Horizontal Resolution:	570 TV Lines / *560 TV Lines*	480 TV Lines	470 TV Lines			
Vertical Frequency:	59.94Hz / *50.00Hz*		59.94Hz / *50.00Hz*			
Horizontal Frequency:	15.734kHz / *15.625kHz*		15.734kHz			
Electronic Shutter:	1/30 (1/25)	1/60 (1/50) ~ 1/10,000 (8 steps)	1/60 to 1/10,000; Extended Integration: 2FLD to 16 FLD (8 Steps)			
Sync System:	Internal/External (HD/VD)	Internal/External VS (CT mode) HD/VD (CC model)	Internal			
Negative/Positive:	N/A	N/A	DSP Selectable			
Minimum Illumination:	0.05 Lux @ F1.2, 50 IRE *0.05 Lux @ F1.2, 50 IRE*	1.99 Lux @ F1.2, 50 IRE *2.15 Lux @ F1.2, 50 IRE*	1.13 Lux @ F1.2, 50 IRE *0.66 Lux @ F1.2, 50 IRE*	1.54 Lux @ F1.2, 50 IRE *0.80 Lux @ F1.2, 50 IRE*	1.93 Lux @ F1.2, 50 IRE *1.43 Lux @ F1.2, 50 IRE*	1.99 Lux @ F1.2, 50 IRE *2.15 Lux @ F1.2, 50 IRE*
Gain:	Fixed: Sentech Programmable	AGC / Manual On/Off (0 ~ 18dB)	AGC / Manual On/Off (0 ~ 18dB)			
S/N Ratio:	56dB (Gain Minimum)	48dB (AGC Off)	48dB (AGC Off)			
Gamma:	1.0 Sentech Programmable	0.45, DSP Adjustable	0.45, DSP Adjustable			
Lens Mount:	N/A	Micro and C-Mount (w/ adapter)	N/A			
Integration Mode:	Field		Field			
DSP:	10 bit DSP	10 bit, User Programmable	10 bit, User Programmable			
Video Out:	1.0 vpp, 75 Ω		1.0 Vp-p, 75 Ω			
Y/C Out:	N/A	0.7 Vp-p, 75 Ω (Select Models)	0.7 Vp-p, 75 Ω			
White Balance:	N/A	Auto / Manual / Push-to-Set	Auto / Manual / Push-to-Set			
Aperture Gain:	N/A	Adjustable via DSP	Off / On (On has 2 levels - user definable)			
Status Feedback:	N/A		2-Bit status output			
Back Light:	N/A		Back light compensation at electronic shutter			
CCD Connection:	10-pin wire harness (Power, Syn, Video)	Various, Model Dependent	Flex Ribbon Cable (length can vary 1 to 6 inches)			Wiring harness (length can vary 1 to 6 inches)
Input Voltage:	+ 12Vdc ± 10%		6 - 8 Vdc			
Power Consumption:	1.76W, 147mA	2.64W, 220mA	1.89W, Approximately 240 mA, variation is CCD dependent			2.64W, 220mA
Operating Temperature:	-10° ~ 45°C (14° ~ 113°F)		-10° ~ 45°C (14° ~ 113°F)			
Storage Temperature:	-30° ~ 60°C (-22° ~ 140°F)		-30° ~ 60°C (-22° ~ 140°F)			
CCU Dimensions:	50(W) x 12.2(H) x 75(D) mm (1.96″ x 0.48″ x 2.95″)	45 (W) x 45 (H) x 14 (D) mm (1.77″ x 1.77″ x 0.55″)	26 (W) x 19 (H) x 60 (D) mm (1.04″ x 0.8″ x 2.4″)			
CCD Head Dimensions:	25(W) x20(H) x 9(D) mm (0.98″ x 0.78″ x 0.35″)	8mm Ø (0.31″ Ø)	12 (W) x 12 (H) mm (0.48″ x 0.48″)			8mm Ø (0.31″ Ø)
Weight:	23g (0.81 oz.)	Cased: 190g (6.7 oz.) Board: 45g (1.58 oz.)	26 g (0.91 oz.)			35g (1.23 oz.)

accessories | Lens Adapters

C-ADPTR	C-Mount Adapter Ring for CS-Mount Cameras (5mm)
LEN-R640-LC	C-Mount Adapter for STC-R640 Series Micro Lens Mounts

accessories | Camera Cables

CameraLink® Cables

CAB-CL2M-MINI	2m Standard to Mini Connector
CAB-CL3M-MINI	3m Standard to Mini Connector
CAB-CL5M-MINI	5m Standard to Mini Connector
CAB-CL10M-MINI	10m Standard to Mini Connector
CAB-CL2M-M2M	2m Mini to Mini Connector
CAB-CL3M-M2M	3m Mini to Mini Connector
CAB-CL5M-M2M	5m Mini to Mini Connector
CAB-CL10M-M2M	10m Mini to Mini Connector

Line Scan Cables

CAB-UFD3M	3m Digital Cable for Line Scan Cameras
CAB-UFD10M	10m Digital Cable for Line Scan Cameras

MV Hirose Cables

12W-2P	Power Cable with a 12 Pin Hirose and +/- Power Spades
12W-02	2m Cable w/ two 12 Pin Hirose Connectors
12W-03	3m Cable w/ two 12 Pin Hirose Connectors
12W-05	5m Cable w/ two 12 Pin Hirose Connectors
12W-0.45	18" cable w/ two 12 Pin Hirose Connectors, male & female

USB Cables

CAB-6USB A-B	6' USB 2.0 Cable, A & B Connector
CAB-6USB A-B Lock	6' USB 2.0 Lock Cable, A & B Connector
CAB-6USB A-M	6' USB 2.0 Cable, A & M (Mini Connector)
CAB-6USB A-M Lock	6' USB 2.0 Lock Cable, A & M (Mini Connector)

Video Cables

12W-3.6PS	12 Pin Hirose (Camera Side) & splits to Y/C Out and Power on a Y split
CAB-3BNC	3' BNC to BNC, Shielded
CAB-6BNC	6' BNC to BNC, Shielded
CAB-6Y/C	6' Y/C to Y/C (S-Video), Shielded

Custom Cables Available - Contact Sentech America for more details.

SENTECH

Monochrome Board-Level Micro Lenses STC-130, 160, 170, E631

Model	Focal Length	F-Stop
LEN-B2.5	2.5mm	F3.5
LEN-B3.6	3.6mm	F5.0
LEN-B6	6.0mm	F3.5
LEN-B8	8.0mm	F2.0
LEN-B16	16.0mm	F1.8

Color Board-Level Camera Micro Lenses STC-600, N/P63, N/P631, N/P632

Model	Focal Length	F-Stop
LEN-C2.3	2.3mm	F3.5
LEN-C2.7-C	2.7mm	F2.0
LEN-C4-C	4mm	F3.5
LEN-C6-C	6mm	F2.0
LEN-C8-C	8mm	F2.0
LEN-P3.2	3.2mm	F4.5
LEN-P3.7	3.7mm	F4.5

Color Board-Level Camera Micro Lenses STC-N64/P64, N54/P54

Model	Focal Length	F-Stop
LEN-N64 L2.0	2.0mm	F2.0
LEN-N64 L2.3	2.3mm	F2.7
LEN-N64 L3.0	3.0mm	F3.0
LEN-N54 P2.9	2.9mm	F2.9
LEN-N54 P3.7	3.7mm	F3.7

Remote Head CameraLink® Micro Lenses STC-RCL33A Series

Model	Focal Length
LEN-RCL33A-L3	3mm
LEN-RCL33A-L6	6mm
LEN-RCL33A-L16	16mm
LEN-RCL33A-L30	30mm

Color Remote Micro Head Camera Micro Lenses STC-R640 Series

Model	Focal Length	F-Stop
LEN-R640-L2.7	2.7mm	F2
LEN-R640-L4	4.0mm	F2.5
LEN-R640-L8	8.0mm	F2.5
LEN-R640-M6.8	6.8 mm Macro Lens	F15.2
LEN-R640-L16	16mm	F2.5
LEN-R640-L611	16mm	F11
LEN-R640-L2511	25mm	F11

Speciality Remote Micro Head OEM Micro Lenses STC-R640 Series

LEN-PT47M1	F2.3, 4.7mm Super Micro Lens with Manual Iris

accessories | Connectors

COM-HR10A-10P-12S	12-Pin Hirose Connector, Cable
COM-HR10-10R-12P	12-Pin Hirose Connector, Panel Mount

accessories | Digital Signal Processing

JIG-COLORUSB	DSP Interface Jig for DSP Programming of all Sentech cameras, connects via USB ports

accessories | Power Supplies

45-601	Regulated 12V DC, 1.5amps, 100-240V AC Input a/ Jack Connector
45-752	Regulated 12V DC, 1.2 amps with Jack Connector
45-752A	Regulated 12V DC, 1.2 amps, spade attachment
PW-DC12-500R	12V DC Supply 500mA with Jack Connector
PW-PSI450-6	12V DC Supply w/ 6 Pin Hirose Connector for CameraLink®
PW-PSISP-6	12V DC Supply with 12 Pin Hirose
PW-PSISP-6YC6	12V DC Supply with 12 Pin Hirose Connector In, Y/C Connector Out

accessories | Tripod Mounts

TP-300	Tripod Mount for STC-400 and STC-1000 Series Cameras
TP-700	Tripod Mount for STC-700 Series Cameras
TP-HCA	Camera Mount for Analog Cube Cameras and CameraLink® Cameras, includes 6 mounting screws

cameras | High Sensitivity Cameras

Many Sentech cameras are available with EXview High Sensitivity CCDs. If your application or system could benefit by having an excellent image quality with significantly less light, this product set will be interesting to you.

Board Level, Monochrome CCD Cameras (EIA or CCIR)

Models	Minimum Illumination	See Pages
STC-H130/H135	0.04 Lux @ F1.2, 20 IRE	88
STC-H160 /H165	0.11 Lux @ F1.2, 20 IRE	89
STC-H170/H175	< 0.01 Lux @ F1.2, 20 IRE	89
STC-H172/H177	< 0.01 Lux @ F1.2, 20 IRE	89

Board Level, Color CCD Cameras (NTSC or PAL)

Models	Minimum Illumination	See Pages
STC-HN63/HP63	0.26 Lux @ F1.2, 20 IRE	80
STC-H620/H625	0.34/0.23 Lux @ F1.2, 20 IRE	81
STC-H630/H635	0.26/0.22 Lux @ F1.2, 20 IRE	81

Cased Level, Monochrome CCD Cameras (EIA or CCIR)

Models	Minimum Illumination	See Pages
STC-HE42A/HC42A	0.04/0.01@ F1.2, 20 IRE	84
STC-HE43A/HC43A	0.01/0.01@ F1.2, 20 IRE	84
STC-H131/H136BT	0.04 Lux @ F1.2, 20 IRE	85
STC-H160/H165BC	0.11 Lux @ F1.2, 20 IRE	85
STC-H170/H175BC	< 0.01 Lux @ F1.2, 20 IRE	85
STC-H172/H177BC	< 0.01 Lux @ F1.2, 20 IRE	85

Cased Level, Color CCD Cameras (NTSC or PAL)

Models	Minimum Illumination	See Pages
STC-HN63/HP63	0.26 Lux @ F1.2, 20 IRE	76
STC-H620/H625	0.34/0.23 Lux @ F1.2, 20 IRE	77
STC-H630/H635	0.26/0.22 Lux @ F1.2, 20 IRE	77

OEM Color CCD Cameras (NTSC or PAL)

Models	Minimum Illumination	See Pages
EGE-HF22N	0.34/0.23 Lux @ F1.2, 20 IRE	95
EGE-HF32N	0.26/0.22 Lux @ F1.2, 20 IRE	95

Remote Head Monochrome CCD Cameras (NTSC or PAL)

Models	Minimum Illumination	See Pages
STC-HR170	0.01 Lux @ F1.2, 20 IRE	89

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